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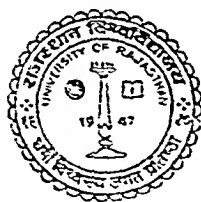
UNIVERSITY OF RAJASTHAN

MINUTES

VOLUME No. LXV-III

(JAN., 1983 TO DECEMBER, 1983)

(Minutes of the Boards of Studies & Committees of Courses)



JAIPUR
UNIVERSITY OFFICE
1983

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MINUSES OF THE MEETING OF THE BOARD OF
STUDIES IN GEOLOGY HELD ON THE 8TH JAN.,
1983 AT 12.00 NOON IN THE DEPARTMENT
OF GEOLOGY, STATION ROAD, UDAIPUR.

Present :

1. Prof. M W. Choudhary (Convener)
2. Dr. B. L. Sharma
3. Dr. M. K. Pandya
4. Shri N. C. Jain

Principal N.P. Vadehra (Dean)
(also attended the meeting).

(Dr. S. K. Agrawal and Dr. T.V.V.G.R.K. Murty
could not attend the meeting).

1. Under clause (iv) of Sub-Section (4) of Section 34 of the University Act, the Board elected Dr. M.K. Pandya, Associate Prof, University Department of Geology, Station Road, Udaipur as the member other than the Convener of the Board of Studies to serve on the Committee for selection of examiners in the subject for the year.

2. The Board scrutinized the statemement of qualifications and teaching experience etc. of teachers, received from the University teaching Departments. University Colleges, affiliated Institutions and other Universities for inclusion in the revised panels of examiners in terms of clause 2 (a) of Statute 25 of the University Hand Book Part II. No applications of teachers for inclusion the nams in Panel were received.

3. The Board discussed the reports of examiners and question papers set for the examinations of 1982 which were made available to the Board. The Board did not offer any comments in this regard.

4. The Board recommended the courses of study and textbooks in the subject for the following examinations together with the relevant additions and/or alterations to the Ordinances and Regulations :

I. Degree Examinations:

(a) First year T.D.C. Examination 1985

As per appendix—1

(b) Second Year T.D.C. Examination 1985

—No Change

(c) Third Year T.D C. Examination of 1985.

— No Change

The Board also recommended the Courses of Study for the Second Year (Pass) and Third Year (Pass) Examination of 1986 and 1987 respectively given in Appendix II and III.

(d) Well defined field work for all the three years of Degree classes was recommended which is incorporated along with the practicals on the following lines.

Ist year T D.C. (Pass) course Examination 1985.

One weeks field work around the cities of Jaipur/Jodhpur/Ajmer and report thereon.

IIInd year T.D.C. (Pass) course Examination 1986. Field work for 10 days duration around the cities of Chittorgarh and Udaipur and other parts of Rajasthan and report thereon.

IIIrd year T.D.C. (Pass) course, Examination of 1987.

Field work for at least 10 days duration in places of geological interest in the States of Rajasthan/Gujarat/Madhya Pradesh and report thereon.

II Honours Examination :

Three years Honours examination in Geology has been dropped from the years 1984-85 and 2 years course on the follo-

wing lines is being recommended for Honours subjects. The subsidiary subjects and papers remaining the same after 1983. syllabus.

New Scheme Honours Examination (Two Years Course) 1984-85 :

B.Sc. (Hons) Part I Examination 1985 (see Appendix IV for details.)

Paper I—Physical Geology, Geomorphology and
Geodynamics.

Paper II—Palaeontology.

Paper III—Crystallography and Mineralogy.

Paper IV—Structural Geology and Sedimentary Petrology.

B.Sc. (Hons.) Part II Examination 1986.

(See Appendix II for details)

Paper V—Igneous and metamorphic Petrology.

Paper VI—Economic Geology and Mineral Economics.

Paper VII—Principles of Stratigraphy and Geology of India.

Paper VIII—Applied Geology.

III Post-Graduate Examinations :

The scheme for M Sc. Previous Geology (Annual Scheme Examination of 1985—No Change.

The Scheme for M.Sc. Final Geology (Annual Scheme) Examination 1986 No Change.

M.Sc. (Technology) Applied Geology 1985.

The nomenclature of Paper II Mining Geology and Prospecting was changed to Mineral Exploration, Mining Geology and Geo-statistics with some additions. The syllabus of recasted and renamed paper is given in the appendix V. Paper IV has been renamed Geotectonics and Ground Water Geology.

A thesis of 100 marks, pertaining to the courses of M.Sc. Tech. Syllabus has been introduce, which would be evaluated by one external examiner. The thesis shall have to be submitted before the theory examinations There will also be a seminar of 50

marks on the subject allotted by the Head of the Department. The evaluation of the seminar would be carried by a board of examiners consisting of senior staff members and M.Sc. Tech. teachers of the Department. The total of theory marks being 500 instead of 400 marks and total of Practicals has also been raised to 450 marks instead of 300 marks. (Appendix V)

1. Field Training programme has been recasted and instead of Project work exploration and mining geology training for one month period has been introduced for 100 marks. This training will be arranged at an operative mine for one month which will include-subsurface surveying and mapping; sampling and drilling practices and handling the data thereof, ore body deliniation, estimation of ore reserves; evaluating data and information. Ore beneficiation practices and mineral economics studies, preparation and study of thin section and polished section of host rocks and ores and report thereon. The details of training and minor changes are given in Appendix V. The modified syllabus of M.Sc. Tech would be effective from the session 1985.
2. 15 days field work consisting of visits to industrial, engineering and mining projects.
3. Field work for the thesis for one month or more
4. Advanced Geology and Structural mapping for 21 days.

V M.Phil. Examination of 1985 :

In view of non-availability of staff, equipment and space it was decided that M.Phil. courses be not commenced in Geology. For the time being the case of equivalence of M.Phil. Geology of Rajasthan University be moved to the Dean, Faculty of Science who has also present in the meeting for needful and onward communication to the Education Secretary, Education Commissioner for needful when they recruit lectures in Geology in Govt. colleges.

5. A sub committee consisting of following members of the faculty was constituted for doing the translation work in Hindi For this purpose it was decided that subjects be distributed to the members of the committee and the synthesis and final drafting of

syllabus be done in a special meeting of Board of studies in Geology to be held at Jaipur for 2 days duration before the meeting of the Faculty of Science.

1. Dr. M.K. Pandya
2. Dr. B.L. Sharma
3. Shri N.C. Jain

The meeting ended with a vote of thanks to the chair.

(M.W. Chaudhary)

Convener

APPENDIX—I

DEGREE EXAMINATIONS

First Year T.D.C. (Pass) Course Examinations 1985

Scheme :

Min. Markes 36

Max. Marks 100

Paper I : General Geology and Palaeontology

Duration 3 hours.

Marks 50

Paper II : Crystallography & Mineralogy

Duration 3 hours.

Marks 50

Syllabus :

Paper I : General Geology and Palaeontology

General Geology :

Scope and Sub-Divisions of Geology and their relation with other fundamental sciences. The Earth in the Planetary system and its shape, size, origin Elements of Geochronology. Internal constitution of the Earth. Nature of the Earth's crust and its movements Origin and distribution of continents, oceans and mountains ranges. Geological work of river, glacier wind, sea and ground water. Coral reefs, volcanoes, their types and products, their distribution and origin. Earthquakes : Present day distribution of Earthquakes and their relation to volcanic activity and crustal deformation, their causes and effects; earthquake waves and their significance in the study of the interior of the Earth. Isostasy Elementary ideas about the concept of seafloor spreading and plate tectonics.

Palaeontology :

Definition and sub division of Palaeontology. Fossils; their conditions, modes of preservation and utility. Morphology and geological distribution of the following Foraminifera, Actinozoa (Corals) Graptoloidea, Echinoidea, Brachiopoda, Lamellibranchia, Gasteropoda, Cephalopoda and Trilobita.

An elementary knowledge of the important plant and vertebrate fossil occurrences in India. Elementary ideas organic evolution.

Paper II : Crystallography and Mineralogy

Crystallography :

Laws of Crystallography. Elements of Crystal Symmetry
Co-ordinate system in crystallography, Millers and Weiss symbol
of notation, crystal forms, classification of crystal systems.

Study of the following crystal classes :

Cubic or Isometric System : Galena type or hexoctahedral
class; Pyrite type or diploidal class; Tetrahedrite type or hexate-
trahedral class.

Tetragonal System : Zircon or ditetragonal-bipyramidal class
Hexagonal System : Beryl type or dihexagonal-bipyramidal class
Calcite type or ditrigonal-scalenohedral class; Tourmaline type or
ditrigonal-pyramidal (hemimorphic) class; Quartz type trigonal
trapezohedral class.

Orthorhombic System : Barytes type or orthorhombic-bipyramidal
class.

Monoclinic System : Gypsum type or prismatic class.

Triclinic system : Axinite type or pinacoidal class.

Laws of twining; Uses of contact goniometer.

Mineralogy :

Construction and use of Petrological microscope Elements
of optical mineralogy—Double refraction, Becke line, interference
colors, pleochroism, extinction angle, Nicol Prism, Quartz wedge
and Gypsum plate. Isotropic uniaxial and biaxial crystals.
Elements of crystal chemistry, ionic radii, Polymorphism.
Pseudomorphism, Elements of bonding in crystals Isomorphism
classification of silicates, physical properties of minerals. Descrip-
tion of important non rock forming minerals. Study of the chemical
composition important physical and optical properties and para-
genesis of the following groups: Olivine, Garnet, Pyroxene,
Amphibole, Mica, Feldspars, Quartz, Nepheline, aluminosilicates,
staurolite Cordierite, Wollastonite, epidote, tourmaline and
Chlorite.

PRACTICAL

Scheme :

Min. Pass marks 18
Duration 3 hours

Max. marks 50
marks 50

Palaeontology :

Drawing, description, identification and geological age of
the following fossils genera.

Invertebrate :

Nummulites, Monograptus, Diplograptus, Calceola. Zaphrentis, Cidaris, Clypeator. Micraster, Hemiaster, Schizaster, Lingula, Productus, Strophomena Orthis, Pentamerus Spirifer, Atrypa, Rhynchonella, Terebratul, Glycimeris, Mytilus. Inoceramus, Spondylus, Pecten. Lima, Ostrea, Loph, Gryphaca, Exogyra, Trigonía, Hippurites, Venus, Pleuromya Bellerophon, Trochus, Nerita, Turritella, Cerithium, Cyprea, Murex. Physa, Conus, Pleurotomaria, Orthoceras, Nautilus Goniatites, Ceratites, Phylloceras, Stephanoceras, Macrocephalites, Perisphinctes, Scaphites, Baculites, Turritites, Belemnites, Calymene, Phacops, Paradoxides, Agnostus, Trincleus.

Plant Fossils :

Glossopteris. Vertebrasia. Gangamopteris Ptilophyllum, Williamsonia.

Crystallography-Mineralogy :

Clinographic projections of the crystals of the Cubic System. Identification and description of Symmetry elements and free hand drawing, of the crystals, corresponding to the syllabus of the theory paper.

Determination of specific gravity with the help of Walker's Steel Yard Balance.

Identification and description of the following minerals :

Graphite. Opal, hematite, limonite, magnetite, chromite, chalcopyrite, pyrite, pyrolusite, limonite, bauxite, halite, calcite, fluorite, tourmaline, magnesite, orthoclase, microcline, plagioclase, hypersthene, augite, tremolite, hornblende, galena, sphalerite, asbestos, beryl, nepheline, sodalite, garnet, olivine, zircon, topaz and sillimanite, kyanite and quartz, chalcedony, flint, jasper, epidote, staurolite, muscovite, biotite, vermiculite, natrolite, stibite, talc, chlorite, serpentine, kaolin, sphene, apatite, barite, gypsum, coal, siderite, garnet, wollastonite, andalusite.

Identification of important rock forming minerals viz. Quartz, Orthoclase, Microcline, Plagioclase, Nepheline, Biotite, Muscovite, Augite, Hypersthene, Hornblende, Actinolite, Tremolite, Olivine, garnet, Staurolite etc. under microscope.

Field work : Geological field work for at least one week's duration and report thereon. The field work would be carried out around Jaipur/Ajmer/Jodhpur.

TEXT BOOKS

General Geology :

1. Soett, W.B. : Antrodution to Geology Vol. I Macmillan.
2. Homes A. : Physical Geology, Thomas Nalson sons London.
3. Spencer : Basic concepts of physical geology.
4. Datta, A.K. : Physical Geology; S.K. Bose, 38. Hazari Bagh Road Ranchi.

Reference Books :

1. Longwell, Knoff and Flint oulines of Physical Geology, John willey and Sons.

Palaeontology :

TEXT BOOKS

1. Woods, H. Invertebrate Palaeontology.
2. Barmar, General Palaeontology.
3. Easton : Palaeontology.

Reference Books :

1. Davies, A.M., Introduction to Palaeontology Thomas Murly & Sons, England.

Crystallography and Mineralogy

1. Reed, H.H., Rutlay's Elements of Mineralogy Thomas Muny and Co. London.
2. Mason, Berry, Mineralogy; Asia publication.

Reference Books :

1. Ford, W.E. Dana's Text book of mineralogy John Willey and Sons. New York.
2. Sharma, N.L. Determinative tables.

APPENDIX—III

B Sc. (Pass) Third Year Examination 1987

Scheme :

Maximum Marks 100

Minimum Pass Marks 36

Paper I—Economic Geology and
mineral Economics

3 hours duration 50 marks

Paper II—Petrology

3 hours duration 50 marks

Syllabus :

Paper I—Economic Geology and Mineral Economics.

Economic Geology and its relationship with various branches of Geology. Magma and its relationship with mineral deposits. Ore and gangue minerals. Historical development of economic geology.

Ore and gangue minerals Elementary ideas about the following processes of ore-genesis, magmatic concentration, contact metasomatism hydrothermal process, Evaporation, Oxidation and supergene enrichment, sedimentation mechanical, concentration residual concentration and matamorphism Elementary knowledge of the classification of mineral deposits.

Modes of occurrence, association, origin, distribution in India and uses of important metallic and non-metallic mineral deposits of India with special reference to that of Rajasthan.

Paper II

3 hours durations

100 mark

Petrology :

Elementary knowledge of the constitution and composition of the magmas Forms and structures of Igneous rocks Crystallisation of simple uni component and bicomponent Silicate melts. Crystallisation of common basaltic magma. Structures and textures, classification and origin of igneous rocks. Study of common igneous rocks, Processes of formation sedimentary rocks. Elementary ideas of sedimentary environments, Textures and classification of sedimentary rocks. Study of common sedimentary rocks. Definition agents types and zones of metamorphism concept of grade zones and facies metamorphism, Textures and classification of metamorphic rocks. Kinds of metamorphism and their products. Injection metamorphism, Retrograde metamorphism, Metasomatism Study of common metamorphic rocks.

Practicals

Scheme :

Maximum marks	50	Min. marks	18
3 hours duration			

Identification of important economic minerals and their distribution in India. Identification of simple economic minerals by blowpipe tests Megascopic and microscopic study of important igneous, sedimentary and metamorphic rocks. viz. Granite, Granodiorite, Diorite, Norite, Peridotite, Dolerite, Trachyte, Basalt, Obsidian, Lamprophyre, Pyroxenite, Syenite, Anorthosite Gabbro, Pitchstone. Rhyolite, Andesite. Phonolite, Pegmatite, Dunite, Limestone, Shale, Sandstone, Greywacke. Conglomerate, Arkose. Breccia, Mylonite, Phyllite, Slate, Schist, Amphibolite, granulite, gneiss, charnockite, Gondite, Khondalite and Kodurite.

Plane table and Chain survey.

Field work :

Field work for at least 10 days duration in the places of geological interest in the states of Rajasthan/Gujarat/Madhy Pradesh and reports there on.

Text Books B.Sc. (Pass) Final Year T.D.C.

Economic Geology and Mineral Economics :

1. Batman, A.M. Introduction to economic mineral deposits.
2. Wadia, M.D. Minerals of India. Book Trust of publication.
3. Rao T.C. & Gokhle, K.V.G K. Ore deposits of India, their distribution and processing.
4. Krishna Swamy. S. India's mineral Resources. Oxford and IBH New Delhi.
5. Sing R.K. Sharma N.L. Mineral Economics Oxford & IBH Publishing Co., New Delhi.

Reference Books :

1. Jensen & Batman. A.N. Economic mineral deposits.
2. Park and Mac. Diasmid, Mineral deposits.
3. Bain, M.F. & Leith. C.K. Mineral Economics Mc. Graw. Hill Book Co.

4. Singh R.K. A Treatise of Industrial minerals of India. Allied Publishers Pvt. Ltd. Bombay.
5. Pandya Dr. M.J. Mineral Economics and Taxation in India. M.G.M.I. Publication India.
6. Hatch, F.H. An introduction to study of ore deposits George Allen & Unwin Ltd.

Petrology :

Text Books :

1. Tyrrel, G.W. The Principals of Petrology, Matheun & Co. London.
2. Harker, A. Petrology Mc. Graw—Hill Book Co. Inc New York.
3. William, Turner & Gilbert. Petrography.

Reference Books :

1. Jackson, J. Text Book of Lithology.
2. Hatch & Wales Petrology.
3. Smith, H G. Minerals & Microscope.
4. Kerr, Optical Mineralogy.

APPENDIX—IV

B.Sc. (Hons) Examinations (Two Years Course)

Part-I Examination—1985

(NEW SCHEME)

Scheme :

Four papers	Duration	Max. marks	Min. pass marks.
Paper I	3 hours	100	160
Paper II	3 hours	100	
Paper III	3 hours	100	
Paper IV	3 hours	100	

Syllabus :

Paper I : Physical Geology, Geomorphology and Geodynamics

1. Geology : Its subdivisions, scope, aims, applications, methods of study and relationship with other sciences, Geological agents, Weathering Coral reefs.

2. Elementary ideas about shape, size, origin and age of the earth, earthquakes, volcanism and interior of the earth.

3. Structure, distribution and origin of mountains. Isostasy, and Geosynclines.

4. Radioactivity, origin of continents and oceans. Elementary ideas of continental drift, & plate tectonics Sea-floor spreading, Island Arcs and Ice ages.

Paper II—Palacontology :

1. Definition and subdivisions, Sample collections and preparation. Modes of preservation of fossils and incompleteness of palaeontological record. Uses of fossils as stratigraphic ecological and evolution indicators. Broad classification of animal kingdom.

2. Morphology and geological distribution of Foraminifera, Corals, Graptolites Echinoides and classification of echinoides.

3. Morphology and geological distribution of Brachiopods Trilobites and classification of brachiopods.

4. Morphology and geological distribution of Bivalves, Gastropods, Cephalopods, Elements of the evolution of cephalopods. An elementary knowledge of the important Gondwana Plants and Tertiary Mammals of India.

Paper III : Crystallography and Mineralogy**Section 'A'**
(Crystallography)

1. Symmetry element, Parameter and Index system of Weiss and Miller. Classification of Crystal systems. Crystal Zones, Twinning. Use of contact and reflection goniometer.

2. Study of the holohedral classes of various systems and hemihedral classes of the cubic and Hexagonal systems.

Stereographic and gnomonic projections. Elementary ideas about the derivation of crystal classes and internal structure of crystals.

Section 'B'
(Mineralogy)

3. Elements of Crystal chemistry : Isomorphism, polymorphism, ionic radii, coordination number, bonding in solids. Classification of silicates.

4. Physical properties of minerals-Determination of RI and birefringence. Uniaxial and biaxial minerals, Double refraction Quartz wedge, unit retardation and accessory plates. Concept of uniaxial and biaxial indicatrix. Formation of uniaxial and biaxial interference figures. Optic axial angle, optic sign, and pleochroic scheme.

5. Study of the chemical composition, important physical and optical properties and paragenesis of the following groups : Quartz, Feldspars, Felspathoids, Micas, Amphiboles, Pyroxenes, Aluminosilicates, Garnet, Olivine and carbonates.

Paper IV : Structural Geology and Sedimentary Petrology**Section 'A' Structural Geology.**

1. Definition, scope, utility and relationship with other branches of geology. Sedimentary structures : Graded bedding, cross stratification, ripple marks, rain prints, Criterion for recognition of top and bottom sequence.

2. Unconformity, classification, geological significance and recognition in the field. Joints classification and economic significance.

3. Geometric and genetic classifications and description of fold, and faults. Their characteristic features, effects on outcrop pattern and economic importance. Criterion of their recognition in the field. Thrust, Napper, Window klippe, outlier and inlier.

4. Elementary ideas of planar and linear structures. Study of geological maps and sections. Plotting of planar and linear structures.

Section B Sedimentary Petrology.

5. Processes of sedimentation and formation of sedimentary rocks. Concept of sedimentary facies. Diagenesis and lithification structures. Simple Textures : Mechanical Chemicals and Organic Classification of sedimentary rocks. Heavy minerals and their significance.

Graphic methods of representation of results of sedimentary analysis. Petrographic study of the following rock type : Conglomerate, Greywacke, Sandstone. Arkose. Shale Munstone, siltstone, Marl, limestone, dolomite. Laterite. Peat. lignite, coal.

Geology Hons. Practicals (Two years course)

Part I : Examination 1986

(NEW SCHEME)

Scheme :

Max. marks—200

Min. Pass Marks—80

Identification and morphological description of important invertebrate, vertebrate and plant fossils with special reference to India.

Clinographic projection of the crystals of the Cubic systems. Identification of crystal models corresponding to the syllabus of the theory paper. Study of simple twins. Stereographic projection of the crystals of the Cubic, Tetragonal system and calculation of the axial ratios

Identification in hand specimens and description of important rock forming minerals under microscope

Determination of length fast, length slow characters of minerals, Determination of optic sign.

Interpretation of geological maps. Completion of outcrops. Simple problems of the width of outcrop, thickness of the strata, true and apparent dip strike and throw of the fault. Solution of true and apparent dip by the stereographic projection. Solution of simple structural problem by stereographic projection.

Identification in hand specimen and description of important sedimentary rocks.

Identification and microscopic description of common sedimentary rock types Preparation of histogram.

Field Work : Field work of atleast 15 days duration in the state of Rajasthan, covering the various disciplines of theory papers and report thereon.

B.Sc (Hons.) Examination (Two Years Course)

Paper II Examination 1986

(NEW SCHEME)

Scheme :

Four Papers	Designation	Max. Marks	Min. Pass Marks.
Paper V	3 hours	100	190
Paper VI	3 hours	100	
Paper VII	3 hours	100	
Paper VIII	3 hours	100	

Syllabus :

Paper V Igneous and Metamorphic Petrology

Section 'A'

1. Forms, structures, and textures of igneous rocks, Crystallization of unicomponent and binary system involving continuous and discontinuous reaction relations. Simple ternary system.

2. Crystallization and differentiation of common basaltic magma. Origin of basaltic magmas and granite. Classification of igneous rocks. Petrography of following igneous rocks. Granite, Granodiorite. Syenite, Diorite. Gabbro, Norite, Anorthosite, Dunite, Pegmatite. Aplite. Dolerite. Peridotite, Lamprophyre. Rhyolite. Obsidian. Pitchstone, Propphyry. Trachyte, Phonolite Andesite, Basalt.

Section 'B'

Metamorphic Petrology

4. Metamorphic textures and structures, Agents, processes and kinds of metamorphism. Metamorphic grades, zones and facies. Metamorphic differentiation. Retrograde metamorphism. Petrography and petrogenesis of following metamorphic rocks: chlorite, magnetite schist, Quartzite Biotite-garnet-staurolite—Kyanite and sillimanite schists. Gneisses amphibolite migmatite, charnockite, granulites, marbles calc-silicate rocks, hornfelses, eclogite and mylonite.

Paper VI Economic Geology and Mineral Economics :**Economic Geology :**

1. Economic Geology and its relationship to various branches of geology. Brief history of the uses of minerals and the development of economic geology. Materials of mineral deposits and their formation. Magma and its relationship to mineral deposits, Classification of Mineral deposits Importance of mineral deposits.

2. Brief description of the following processes of the formation of mineral deposits : Magnetic concentration contact metasomatism, Hydrothermal processes, cavity filling and metasomatic replacement sedimentation. evaporation, residual concentration, oxidation and supergene sulphide enrichment, metamorphism.

3 Distribution, modes of occurrence and uses of the important metallic and non metallic mineral deposits of India.

4. Economic mineral deposits of Rajasthan.

Mineral Economics :

Mineral economics and its concepts. Tenor, grade and specifications of economic minerals for the various industries. Elements of ore-dressing, viz. hand sorting, crushing, jigging, flotation and heavy minerals separation, Strategic, critical and essential minerals conservation and substitution of ore minerals Nation Mineral policy.

Paper VII Principles of Stratigraphy and Geology of India.

Development of stratigraphy and founding of Geologic system. Stratigraphic relationships. Basic principles of correlation.

Indian stratigraphical units and their European/Standard equivalents.

Detailed study of Precambrian formations of India including their distribution, occurrence and economic importance.

Stratigraphy, distribution, occurrence, fossils contents and economic importance of the Palaeozoic and Mesozoic formations of India.

Stratigraphy, distribution, occurrence, fossil contents and economic importance of the Tertiary and recent formations of India.

Paper VIII Applied Geology.

Preliminary knowledge of geological and geophysical prospecting, sampling and ore estimation. Elements of open and

underground mining Elementary knowledge of Drilling blasting and explosives.

Principles of mineral dressing. Benefication methods, applicable to lead, zinc, copper. Elements of Ground water geology; Hydrological cycles. Occurrence and distribution of ground water, geological formations as Aquifers. Distribution of Ground water in Rajasthan.

Elementary ideas of application of geology in Civil Engineering works; dams, tunnels, building and road material.

Objects of surveying, Topographic maps and their uses in geology, Constructions and uses of important surveying instruments:

Clinometer, prismatic and Brunton compass and Dumpy level, chain and plane table.

Geology Hons. Practicals (Two Years Course)

Part II Examination—1986.

Scheme :

Max. Marks—200

Min. Pass marks 80

Identification in hand specimen and description of the important igneous and metamorphic rocks.

Identification and microscopic description of metamorphic rocks.

C.I.P.W. norm calculation of oversaturated and Saturated igneous rocks. Calculation of Niggli and ACF values.

Identification of important economic minerals and their distribution in India. Blow pipe analysis of simple ores Distribution of economic minerals in Rajasthan.

Identification and description of important stratigraphic rocks of India. Stratigraphic and important palaeogeographic maps of India.

Survey by Chain, Plane Table and Prismatic Compass.

Field work :

Field work for a duration of at least 3 weeks in the states of Rajasthan, Gujarat and Madhya Pradesh pertaining to the disciplines of theory papers and report thereon.

Books Recommended

Paper I—

Holmes, A.—Physical Geology, Thomas Nelson Sons. London
Spencer —Basic concepts of Physical Geology.

Datta, A.K. —Physical Geology, S K. Bose, 38 Hazari Bagh Road, Ranchi

Longwell, Knoff and Flint : Out lines of Physical Geology. Hohn willey and Sons.

E. W. Spencer—Introduction to the structure of Earths Crust (Mc Graw Hill).

Paper II

Woods. H Invertebrate Palaeontology

Easton Palaeontology

Davies, A.M. Introduction to Palaeontology Thomas Murty & Sons, England

R. Shrock and Twenhofel W.H., *Principles of Invertebrate palaeontology* (Mc Graw Hill)

Paper III—

Read, H H., *Rutelys Elements of Mineralogy*, Thomas Murty & Co., London.

Mason. Berry, *Mineralogy*, Asia Publication

Ford. W.E. *Dana's Text Book of Mineralogy*, John wiley and Sons, New York.

Phillips, F.C. *An introduction to crystallography* Bucrger, M.J. *Elementary crystallography* (J. Wiley & Sons.)

R.C. Evans —*Crystal Chemistry* (Combridge University Press).

W.A. Deer, R.A. Howie and J. Zussman—*Introduction to Rock forming Minerals* (Longmans)

Paper IV :

1. Structural Geology by M.P. Billings (Asia)
2. Chiplonkar, G.w. *Geological Maps*
3. *An outline of structural Geology*—J. Wiley & Sons. B.E. Hobbs, Means, W.D. & William, P.F.
4. Ramsay, H.G. *Folding and Fracturing of rocks* (Mc Graw Hill, London)

Tyrrell. *Principles of Petrology* Metheun and Matheun Co., London Harker *Petrology* Mc-Graw Hill Book Co. Inc. New York William Turner and Gilbert *Petrography*

Jackson—*Text Book of Lithology*

Kerr —*Optical Mineralogy*

Haung. W.T., *Petrology*, Mc-Graw-Hill Book Co., Inc. New York, 1962

Folk, R.L. Petrology of Sedimentary rock (Hamphill
Pub. Co.)

Paper V :

Tyrrell : Principles of Petrology (Matheun and Matheun Co,
London)

Harker Petrology—Mc Graw Hill Co., London.

William Turner and Gilbert—Petrography

Jackson Text Book of lithology.

Ker—Optical Mineralogy.

Haung, W.T. Petrology—Mc Graw Hill.

Turner, F.J. & Verhoooge, J., Igneous and metamorphic petrology
(Mc Graw Hill).

Winkler, H.G F. Petrogenesis of metamorphic rocks (Springer
Verlag) Bowen, N L Evolution of Igneous rocks.

Paper VI :

Bateman. A M.

Economic Mineral Deposits, (J. Wiley & Sons)

Smirnov, V. I Geology of Mineral Deposits (MIR. MosC-ow)

Park C F. and Mac. Diarmid (W.H.)

Ore and Deposits (W H. Freeman)

Krishnaswamy, Mineral Resources of India

Sinha. R. K. and Treatise on Industrial Minerals of India.

Sinha. R. K. and Sharma N.L Mineral Economics.

Geology and Geotechnics, (Mc Grawhill)

Schultz, J.K. Cleaves, A B., Geology in Engineering (J. Wiley and
sons)

APPEND X V

M.Sc. Tech. 1985

PAPER II

MINERALS EXPLORATION MINING GEOLOGY AND
GEOSTATISTICS*Section 'A'*

Exploration and mining Geology outline of growth and development of mining geology gathering and presenting geological data including geologic mapping in underground mines. Ore search and guides. Drilling for geologic information-planning of drill-holes logging of drill hole data.

Sampling ore bodies and estimating ore reserves. Examination and evaluation of prospects and mines. Role of Geologist in exploration and mining consulting geologists. Exploration Geophysics-Fundamentals of geologicals prospecting. Methods and applications. Air borne and ground geophysics planning and co-ordinating geophysical work. Exploration Geochemistry-Principles of geochemical prospecting; exploration geochemistry sequence; methods and applications Field and laboratory analytical methods. Assaying methods. Treatment of geochemical data. Ore Microscopy-Principles of ore-microscopy significances and procedures of polished section etching scientific and industrial application of ore microscopy.

Section 'B'

Mean, Median, mode. Standard deviation, Skewness, Kurtosis. Graphical representation of data. Probability and Probability distribution-Normal, Binomial, Poisson, Lognormal. Testing of the Hypothesis—'t' test, 'F' test and chi-square test. Analysis of variance-one way and two way, covariance, correlation and Regression. Moving averages, Kriging and etc application in Mining Geology. Elements of Multivariate analysis, Elementary nonparametric statistics. Elementary computer programming.

Field Training :

1. Exploration and Mining Geology Training of one month this training will be arranged at an operative mine for one month which will include—subsurface surveying and mapping; sampling and drilling practices and handling the data thereof; ore body deliniation, estimation of ore reserves; evaluating data and information. Ore beneficiation practices and mineral economics studies and report thereof.
2. 15 day field work consisting of visits to industrial, engineering and mining projects.
3. Field work for the thesis for one month or more.
4. Advanced geological and structural mapping for 21 days of mineral deposits.

5. Candidate would be required to undergo training after the M.Sc. tech. (Applied Geology) examinations at an operating mine for a period of 3 months. The degree shall only be awarded after the successful completion of training arranged by the Head of the Dept. and certificate duly approved by him.

M.Sc. Tech. Applied Geology 1985

Scheme of Examinations :

Paper I—Structural Geology and Micropalaeontology	3 Hrs.	100 Marks
Paper II—Mineral Exploration, Mining Geology & Geostatistics.	3 Hrs.	100 ..
Paper III—Mineral Technology & Mineral Economics	3 Hrs.	100 ..
Paper IV—Geotechnics & Groundwater Geology	3 Hrs.	100 ..
Thesis—	100 marks (pertaining to the courses of M.Sc. Tech. Syllabus)	

M. Sc. Tech. Practical Examinations Scheme for Practicals 1984-85.

(Time 20 hours spread over five days four hours each day)

Total 400 Marks.

A. Group 2 days :	Max. marks 205
1. Structural Geology	25
2. Micropalaeontology	20
3. Survey and related problems	25
4. Viva-voce	25
5. Field training (General tour)	20
6. Structural mapping training	20
7. Laboratory records	20

Seminar— 50

B. Group 3 days :	Max. marks 145
1. Ore-microscopy	25
2. Ore specimens	20
3. Mining Geology problems	20
4. Geostatistics problems	20
5. Assaying	20
6. Viva-voce	20
7. Laboratories records	20

Mineral Exploration and Mining Geology Training
and report thereon. 100

Total of Practical Marks. 450

MINUTES OF THE MEETING OF THE B.O.S. IN
POLITICAL SCIENCE HELD ON 8 9TH JANUARY,
1983 AT 12.00 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT (NEW BUILD-
ING), UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Principal B.L. Gaur (Convener)
2. Vice-Principal Jiwan Mehta
3. Shri P.L. Banati
4. Shri P.K. Chadha
5. Shri J.N.S. Poonia

(The external members Dr. L.S. Rathore, Jodhpur University, Jodhpur and Dr. B.R. Purohit, Udaipur University, Udaipur could not attend the meeting).

III. (Honours Examinations) (Two Year Scheme)

- (b) Part II Examination of 1985) As per *Appendix IV*
(For 1984 Examination also).

IV. Post-graduate Examinations :

- (a) M.A. Previous (Annual No Change except Scheme) Examination of 1985. paper IV given in *Appendix V*
- (b) M.A. Final (Annual (Scheme) Examination of 1985. No change except as given in *Appendix VI*. (For 1984 Examination also).

V. M.Phil Examination of 1985 :

No change except
as given in
Appendix VII.
(For 1984 Examination also).

6. The Board resolved that the books in Hindi mentioned in Appendix VIII be added as 'Core Books' for papers mentioned therein.

7. The board resolved that the resolution of the subject committee of 11.10.82 be forwarded to the Academic Council for reviewing the Viva-voce for the current session as existed in 1982 examination.

8. Resolved that the changes proposed for M.A. Examination in paper IV and Paper VII & VIII & M.Phil introduced from 1984 Examination also.

9. It has been brought to the notice of the B.O.S. that all the paper setters and Addl. H.E. of 1982 have not been appointed Examiners in the supple. Examination.

The Board feels that this is a clear violation of the accepted norms procedure for supply. Examiners.

The Board wishes the Convener of the B.O.S. to take up this matter with Controller of Examinations.

Sd/-B.L. Gaur
(Convener)

APPENDIX IV

(Ref. Res. No. 5 (III) (B))

- Paper V** —History of Western Political Thought—
(As Hons. Paper V of Hons. Pt. III of Three Years Scheme of 1983 at pages 36 and 37).
- Paper VI** —Scope and Methods of Political Science :
(As Paper II of syllabus of Hons. Pt. I of three years scheme. 1982 page 55).
- Paper VII** —International Politics :
(As Hons. Paper VII of Hons. Pt. III of three years scheme of 1983 at page 38).
- Paper VIII** —Any one of the following papers Either
Indian Administrations
or International Law
or Research Methods
(As Hons. Paper VIII of Hons. Pt. III of three years scheme of 1983 at pages 39 to 41).

APPENDIX-V

(*Ref. Res. No. 5 IV (a)*)

Paper IV —Theory and Practice of Public Administration :

3 hrs. duration

100 marks.

The V.C. be requested (i) to permit the student of M.A. Examination of 1983 to offer *either* paper—Theory and practice of Public Administration or Paper-Principles of Administration and Management, and (ii) to adopt the courses of study in Paper-Theory and Practice of Public Administration as given in 1980 Education of the syllabus in place of Paper Principles of Administration and Management for 1984 Examination.

APPENDIX-VI

(Ref. Res. No. 5 IV (b))

Paper VII and VIII—Group B International Politics :

The following papers be re-introduced.

(vii) International Organization :

(As given in the syllabus of 1982-83
at pages 25-26).

**(viii) Government and Politics of South
Asia :**

(As given in the syllabus of 1982-83
at pages 29-30).

(For 1984 Examination also).

Paper VII and VIII—Group A (ii) :

Ancient Indian Political Institutions.

or

Ancient Indian Political Thought.

(As given in the Syllabus of 1982-83
at pages 20 and 21).

(For 1984 Examinations also).

APPENDIX-VII

(*Ref. Res. No. 5 (V)*)

Group E—Area Studies :

Paper IV—Government and Politics of South Asia be as introduced)

(As given in the syllabus of 1981-82).

(1984 Examinations also).

APPENDIX-VIII

(Ref. Res. No. 6).

1. Paper I —History of Political Theory from Plato to Marx :

- (i) राजनीतिक चिन्तन का इतिहास—द्वारा—जीवन मेहता (माहित्य भवन, आगरा) ।

2. Paper II —Comparative Political Institutions :

- (i) तुलनात्मक राजनीति एवं राजनीतिक मस्याएं—द्वारा—सी०वी० गैना (विकास पब्लिशिंग हाउस, प्रा. लि., नई दिल्ली) ।

- (ii) तुलनात्मक राजनीति—द्वारा—जे० सी० जाँहरी स्टरलिंग पब्लिशर प्राई. लि., दिल्ली ।

(Sterling Publishers Pvt., Ltd.

3. Paper III—International Politics :

- (i) अन्तर्राष्ट्रीय सम्बन्ध—द्वारा—पी. के. चट्टा, आदर्श प्रकाशन, चौड़ा रास्ता, जयपुर ।

4. Paper IV—Theory and Practice of Public Administration :

- (i) लोक प्रशासन—द्वारा—आर. एल. सिंह, रत्न प्रकाशन आगरा ।

- (ii) लोक प्रकाशन—द्वारा—डा. पी. डी. जर्मा, कालेज बुक डिपो, जयपुर ।

- (iii) प्रशासनिक विचारधाराएं भाग I व—2 द्वारा—एन.एल. वर्मा, राज. हिन्दी ग्रंथ अकादमी, जयपुर ।

5. Paper V—Either (i) Modern Political Theory :

- (i) आधुनिक राजनीतिक सिद्धान्त, तृतीय संस्करण 1980—द्वारा—एन.एल. वर्मा, मोनाली प्रकाशन, मेरठ ।

(ii) Political Theory from Marx to Present day :

- (i) समकालीन राजनीतिक चिन्तन एवं विश्लेषण—
द्वारा—एस्. एल. वर्मा, मेकमिलन, दिल्ली ।

6. Paper VI—Indian Government and Politics :

- (i) Democratic Politics in India by
Dr. K.L. Kamal and Ralph C. Meyer
(Published by Vikas Publishing
House, Delhi).

- (ii) भारतीय राजनीतिक प्रणाली—द्वारा—पी.के. चट्टा
आदर्श प्रकाशन, चौड़ा रास्ता, जयपुर ।

7. Group E Paper VII and VIII—Indian Govt. and Politics :

- (iv) Party Politics in an Indian State—
A study of the main Political parties
in Rajasthan by Dr. K.L. Kamal.
(Published by S. Chand & Co., Delhi)
-

संस्कृत अध्ययन मण्डल की मीटिंग दिनांक 4 मार्च 1983 को कुलपति सचिवालय में सम्पन्न हुई। उपस्थिति इस प्रकार रही—

1. डॉ० चन्द्र किशोर गोस्वामी
2. डॉ० अभयदेव गर्मा
3. डॉ० नरेश चन्द्र पाठक
4. श्री वजरंग लाल
5. डॉ० प्रभाकर शास्त्री (संयोजक)

नवप्रथम 1982 की परीक्षाओं के प्रश्नपत्रों पर विचार विमर्श प्रारम्भ हुआ।

1. (I) एम.ए. फाइनल वर्ग (अ) के प्रथम पत्र के चतुर्थ प्रश्न की संरचना ठीक नहीं है। सम्भवतः अवान्तर क, ख, ग, घ सही नहीं है। मोडरेशन के अभाव में यह न्यूनतायें दृष्टिगोचर हुई हैं।

(II) अनुशंसार्थ निर्णय किया गया कि प्रत्येक विषय प्राध्यापक को सूचित किया जाय कि यदि उनके क्षेत्र पर प्रश्न पत्र सम्बन्धी कोई शिकायत हो तो उसकी प्रति संयोजक को भी भेजें ताकि वे उसके समाधान में प्रयत्नशील हो सकें।

(III) एम.ए. (पूर्वाद्ध) प्रथम पत्र का प्रथम प्रश्न किन्हीं दो मन्त्रों की हिन्दी तथा तदतिश्रुति किमी एक मन्त्र की संस्कृत में व्याख्या पूछी जानी चाहिए। भाषा में सुधार होना चाहिए।

(IV) एम.ए. फाइनल तृतीय पत्र वर्ग अ आधुनिक संस्कृत साहित्य के दो प्रश्न पत्र निर्माण कराये जाएं उचित नहीं था। जांच की जानी चाहिए ऐसा क्यों हुआ? भविष्य में सावधानी रखनी चाहिए।

2. निरुक्त में सहायक ग्रन्थ जोड़े जाय—(प्रथम पत्र—एम.ए. पू.)

1. निरुक्त दीपिका आचार्य विश्वेश्वर
भारती ज्ञान मण्डन, काशी

2. निरुक्त—वी०के० राजवाडे
 3. निरुक्त—लक्ष्मण स्वरूप, हिन्दी अनुवाद सत्यभूषण योगी
 4. Etymologies of Yark—सिध्देष्वर वर्मा
 5. Vedi Etymologies—Dr. Fateh Singh
 6. निरुक्त मीमांसा—शिव नारायण शास्त्री
इन्हें वैदिक वर्ग की पुस्तको के साथ भी जोड़ा जाए ।
3. प्रथम द्वितीय व तृतीय वर्ष कला के लिए सूत्र शैली में व्याकरण पढ़ाये जाने के क्रम में उपसमिति की अनुशंसाओं को जो 3 मार्च 1983 की मीटिंग में निश्चित हुई थी, मण्डल ने सर्व सम्मति में स्वीकार किया । परिशिष्ट (क) संलग्न है ।
4. एम. फिल. 1984 में तीन पत्रों के स्वरूप निर्धारण पर दिनांक 29-30 नवम्बर, 82 की मण्डल की मीटिंग के (4(ई) के निर्णयानुसार) गठित समिति की अनुशंसाओं को मण्डल के नमूने प्रस्तुत किया गया तथा मण्डल ने उसका अवलोकन कर सर्व सम्मति में स्वीकार किया । परिशिष्ट —‘ख’ संलग्न है ।
- संयोजक को धन्यवाद अर्पित करने के बाद कार्यवाही समाप्त हुई ।

(डॉ. प्रभाकर शास्त्री)
संयोजक

परिगणित—क

प्रथम वर्ष टी.डी.सी. आर्ट्स

1. मंजप्रकरण—पूर्ण (नूत्र 14)

2. मंदि—

मुद्युपान्यः, मध्वरिः, वात्रंज. लाहृतिः, हरये, विष्णवे.
 नायकः. पादकः, गव्यम्. गव्यूतिः, उपेन्द्रः, गंगोदकम्.
 कृष्णविः, हर इह हर विह । कृष्णैकत्वम्, गंगोदः, उपैति.
 प्रष्ठाहः. प्राच्छंति, प्रेक्षते. जिदेहि, मनीषा, दैत्यारिः, श्रीगः,
 हरेज्व हरी एनो, विष्णू इनो गंगे अमू, अनी ईजा, अहो
 ईजाः गमज्जेते, रामज्जिनोति, विष्णुः. रामप्यष्टः, पण्णाम्,
 वागीशः, पुनन्तुगारिः, तल्लय, उत्थानम्, वाग्धरिः, तन्निध्वः,
 हरिखन्दे, यशंसि, जालः, मंस्कृता, सल्लच्युतः, प्रत्यङ्ग.ड.तना,
 मुगन्गीशः शिवच्छाया ।

विष्णुस्त्राता, हरिज्जेते, शिवोर्ज्यः, शिवो वन्दः, देवा इह
 ओ देवा, पुना रमते, मनोरथः ।

प्राध्यापकों ने यह अपेक्षा की जाती है कि वे सन्मद्ध सूत्रों का अध्यापन
 कराते समय उपर्युक्त शब्दों के समकक्ष अन्य उदाहरणों से भी विद्यार्थियों को
 परिचित कराये ।

नोट—उपर्युक्त शब्दों की निम्ति में प्रयुक्त होने वाले सूत्रों की व्याख्या का
 सभी तीनों वर्षों में समान अध्यापन भी विद्यार्थियों को अनिवार्यतः
 कराया जाना है ।

द्वितीय वर्ष आर्ट्स

संस्कृत—द्वितीय पत्र

1. निर्णयार्थ अनुशंसा की गई कि “नानिक” (अजन्त तथा हतन्त)
 में से सूत्रों के स्थान पर शब्द निम्ति को महत्त्व दिया जाय ।
 निम्नलिखित शब्दों की निम्ति निर्धारित की जाय—

अजन्त पुँल्लिग प्रकरण

राम (35 सूत्र) नवं (5 सूत्र) हरि (7 सूत्र) ओष्ट (7 सूत्र)

अजन्त स्त्रीलिंग प्रकरण

रमा (4 सूत्र) मति (3 सूत्र)

नपुंसक लिंग प्रकरण

ज्ञान (7 सूत्र) दधि (3 सूत्र)

हलन्त पुल्लिंग प्रकरण

लिह् (1 सूत्र) दुह् (3 सूत्र) चतुर् (4 सूत्र) इदम् (9 सूत्र)

युष्मद्-अस्मद् (21 सूत्र)

हलन्त स्त्रीलिंग प्रकरण

इदम् स्त्रीलिंग (1 सूत्र)

हलन्त नपुंसक प्रकरण

अहन् (1 सूत्र)

2. वर्तमान में निर्धारित द्वितीय प्रश्न पत्र की अंक योजना में निम्न लिखित परिवर्तन स्वीकार किया जाय—

1. भारतीय सस्कृति के तत्त्व	30 अंक
2. पद्य साहित्य	30 अंक
3. अनुवाद	15 अंक
4. व्याकरण (नामिक प्रकरण)	25 अंक
	<hr/>
	100 अंक

तृतीय वर्ष कला—द्वितीय पत्र

आख्यातिक

भ्वादि प्रकरण

भू धातु (70) एव (17 सूत्र) कमु (10 सूत्र)

अदादिकरण

अद (7 सूत्र)

बुहोत्यादिगण

हु- (5)

दिवादिगण

दिवृ (1 सूत्र)

स्वादिगण

पृब् (1 सूत्र)

तुदादिगण

तृद् (1 सूत्र)

रूधादिगण

रूध (1 सूत्र)

तनादिगण

तनु (2 सूत्र)

डुक्कीब् (1 सूत्र)

चुरादिगण

चुर (2 सूत्र)

अंक योजना

6. द्रुत पाठ	30 अंक
2. अनुवाद (हिन्दी व संस्कृत)	20 अंक
3. रचना (निबन्ध)	20 अंक
4. व्याकरण	30 अंक
	<hr/>
	100 अंक

परिशिष्ट—(ख)

संस्कृत पाठ्यक्रम मण्डल की मीटिंग 29-30 नवम्बर, 1982 के निर्धारण संख्या 4(इ) के अनुसार M. Phil के प्रथम पत्र का स्वरूप ।

M. Phil प्रथम पत्र

वर्ग—अ (साहित्य)

साहित्यशास्त्र के प्रमुख आचार्यों की दृष्टि से —

1. काव्य का लक्षण- काव्य हेतु, काव्य प्रयोजन व काव्य भेदों पर विचार ।
2. काव्य की शक्तियाँ—अभिधा, लक्षणा, व्यंजना व तात्पर्यव्यावृत्ति पर विचार ।
3. रस सूत्र तथा उसके प्रमुख व्याख्याकार धनञ्जय की रस मीमांसा. साधारणी—करण ।
4. गुण तथा दोषों का विवेचन, अलंकार लक्षण भेद ।
5. नाट्यशास्त्र के अनुसार नाट्य मण्डपो का निर्माण, नाट्य के भेद, वस्तु के प्रकार, नायको के भेद, प्रमुख नायिका भेद, नाट्य वृत्तियाँ, अर्थो—पक्षेपक कार्यावस्थायें में अर्थ प्रवृत्तियाँ, मन्धियाँ, नाट्य में प्रयुक्त प्रमुख पारिभाषिक शब्दों का विवेचन ।
6. पाश्चात्य काव्य शास्त्र के प्रमुख सम्प्रदाय उनकी भारतीय काव्य सिद्धान्तों से तुलना ।

संस्तुत पुस्तकें—

1. डॉ. एस. कं. डे. संस्कृत पोइटिक्स
2. डॉ. पी. वी. काणे—हिस्ट्री ऑफ अलंकार लिटरेचर
3. बलदेव उपाध्याय—भारतीय साहित्य शास्त्र
4. कन्हैयालालपोद्दार—संस्कृत साहित्य का इतिहास
5. अरस्तु काव्य शास्त्र—डॉ. नगेन्द्र दत्त अनुवाद
6. मम्मट—काव्य प्रकाश— (डॉ. आचार्य विजयेश्वर दत्त व्याख्या भूमिका भाग)
7. साहित्य दर्पण—विश्वनाथ

8. रत्नगंगाधर—एक समीक्षात्मक अध्ययन—कुमारी चिन्मयी माहेश्वरी
9. ध्वन्यालोक—आनन्दवर्धन—डॉ. आचार्य विश्वेश्वर कृत व्याख्या—भूमिका भाग ।
10. भरत नाट्य शास्त्र—अभिनव भारती नहित
11. वनस्रय—दशरूपक—नान्दी टीका—डॉ. रामजी उपाध्याय
12. सावित्री मिन्हा—पाश्चात्य काव्यशास्त्र का इतिहास ।

वर्ग—व (वेद)

1. वैदिक साहित्य का मिन्हावलोकन
2. वेदों का रचनाकाल—भारतीय व पाश्चात्य मत
3. ऋग्वेदादि संहितायें व उनका विज्लेपण
4. ब्राह्मण व आख्यान साहित्य
5. उपनिषद् साहित्य—प्रमुख उपनिषदों की वर्ण्यवस्तु व उनका प्रतिपाद्य
6. प्रमुख देवताओं का स्वरूप विवेचन
7. पदपाठ के प्रमुख सिद्धान्त स्वर—ज्ञान

वर्ग—'स' (दर्शन)

1. दर्शन शब्द की व्याख्या, आस्तिकदर्शन, नास्तिक दर्शन, सिद्धान्त विवेचन
2. नांन्द्य व योग दर्शन के प्रमुख आचार्यों का इतिहास, उनका व्यक्तित्व व कृतित्व
3. न्याय—वैशेषिक दर्शन के प्रमुख आचार्यों का इतिहास—उनका व्यक्तित्व व कृतित्व ।
4. पूर्वमीमांसा व उत्तरमीमांसा दर्शन के प्रमुख आचार्यों का इतिहास—उनका व्यक्तित्व व कृतित्व
5. जैन व बौद्ध दर्शन के प्रमुख सिद्धान्तों का विज्लेपण ।
6. कार्य—कारण सिद्धान्त, विभिन्न दर्शनों की दृष्टि में आत्म तत्व मोक्ष व ईश्वर स्वरूप ।
7. प्रमाण विचार (विभिन्न दर्शनों के अनुसार)

संस्तुत पुस्तकें—

1. भारतीय दर्शनो—वलदेव उपाध्याय
2. भारतीय दर्शन—उमेश मिश्र
3. S. N Dasgupta—History of Indian Philosophy.
4. S. Radhakrishnan—Indian Philosophy I, II.
5. सांख्यतत्त्व कौमुदी—

वर्ग—द (धर्मशास्त्र)

1. हिन्दू संस्कारों का विवेचन, वर्णाश्रम धर्म, वर्म शब्द की विभिन्न व्याख्यायें, राज धर्म ।
2. प्रसिद्ध धर्म सूत्रकारों, स्मृतिकारों, निवन्धकारों व उनके टीकाकारों का इतिहास ।
3. निधि निर्णय के नामान्य सिद्धान्त, काल विवेचन मलमास, व्रतादि कर्म परिभाषा, एकादशी निर्णय, इष्टि निर्णय, ग्रहण निर्णय, व्रज्यावर्ज्य निर्णय ।
4. श्राद्ध लक्षण, श्राद्ध की विधि पण्यवति श्राद्ध, महालय श्राद्ध, एकोष्टि पार्वण, नान्दी आदि प्रमुख श्राद्ध भेद, मणिङ्गीकरण ।
5. आशीच प्रकरण—जननाशीच, मरणाशीच, अम्भराशीच, आशीच-संकर, स्त्र्याशीच, वाला शीच ।
6. व्यवहार लक्षण, अष्टादश व्यवहारपद, प्रतिजालेखा, सासी दिव्य, उत्तर के प्रकार आदि ।

संस्तुत पुस्तकें :

1. धर्मशास्त्र का इतिहास —पी.वी. काणे
2. मनुस्मृति—संपूर्ण (कुल्लुक भट्ट टीका)
3. याज्ञवल्क्यस्मृति;—संपूर्ण विज्ञानेश्वर भाष्य
4. संस्कार प्रकाशः वीरमित्रोदय
5. हिन्दू संस्कार—गजबली पाण्डेय
6. शुद्धि विवेक—रुद्रधर
7. श्राद्ध विवेक—रुद्रधर
8. धर्मसिन्धुः—काशीनाथ उपाध्याय

एम. फिल् 1984

द्वितीय-पत्र

संस्कृत व्याकरण

1. (क) लघु सिद्धान्त कौमुदी
 - (अ) संज्ञा, सन्धि व नामिक प्रकरण ने प्रश्न 10 अंक
 - (आ) भ्वादि गण ने चुरादि गण—
(निम्नलिखित धातुओं की रूपसिद्धि मात्र) 10 अंक
 - (इ) प्रक्रिया, कृदन्त व समास प्रकरण 10 अंक
 - (ई) तद्धित व स्त्री प्रत्यय 10 अंक
- (ख) व्याकरण साहित्य का इतिहास 10 अंक

पठनीय धातुयें भ्वादि गण—भू, अत, पिब गद, राद, अचं,
अज, कटे, गुप्, क्षि, क्रमु, पा, ग्लै, ह्व, श्रु, गम्लृ, एव,
कमु, अय, द्युत, वृत्, ऋप्, थिञ्, भृञ्, यज, वह ।

अदादि गण—अद, हन, यु, या, विद, अस्, इण्, शीङ
इङ्, दुह्, वृञ्, ऊर्ण्, ञ्

जृहोत्यादि—हु, जिभी, पृ, ओहाक्, माङ्, डुभृ, डुदा
णिजिर, डुघाञ् ।

दिवादिगण—दिवु, नृती, व्यव, गण, दीङ्, जनी, सृज
त्वादिगण—पृञ्, चिञ्, घृञ्,

तुदादिगण—तुद, अस्ज, कृप, मुच्लृ, पिच, लुभ ठुमस्जो,
पद्लृ, कृ, गृ, प्रच्छ, मृड

रुवादिगण—रुविर्, तृह हिति, भुज,

तनादिगण—तनु, पणु, डुवृञ्,

क्र्यादिगण—डुफ्रीञ् मीञ्, पूञ्, स्तृञ्, ग्रह,

चुरादिगण—चुर, गण

तृतीय प्रश्न पत्र—शोध-प्रविधि एवं हस्तलेख-विज्ञान

शोध-प्रविधि—25

हस्तलेख —25

1. शोध एवं उसके प्रकार—साहित्यिक शोध : अवधारणाएं,
साहित्यिक शोध के तत्त्व व सिद्धान्त, समालोचना और अनुसंधान,

अन्वेषण और गवेषणा, नाट्यिक भेद, साहित्यिक शोध के प्रकार, सांसाधनिक अध्ययन, ऐतिहासिक व तुलनात्मक अध्ययन, पाठालोचन, शोध के अधिकारी व प्रयोजन ।

2. शोध का क्षेत्र, शोध-क्षेत्र का चयन, सम्पन्न क्षेत्रीय शोध का पुन-मूल्यांकन, विषय-निर्वाचन, विषय की सीमाएं, संक्षिप्त रूपरेखा प्राथमिक एवं माध्यमिक स्तरों ।
3. प्रबन्ध की तैयारी—सामग्री-संकलन, सहायक व सन्दर्भ ग्रन्थ-सूची का निर्माण काडों (ग्रन्थ-सूचीपत्रों) पर ग्रन्थों के उद्धरण लेना व सारांश ग्रहण करना, वर्गीकरण, विश्लेषण तथा संगृहीत सामग्री का उपयोगी विवेचन सन्दर्भलेखन, कार्य की योजना बनाना, रूपरेखा के अनुसार अध्यायों का विभाजन, (शोधमार्ग), प्रबन्ध लेखन की तैयारी ।
4. अनुबन्ध योजना—पूर्वानुबन्ध, प्राक्कथन, विषय-सूची, मूलग्रन्थ संकेत-सूची, पश्चानुबन्ध-परिशिष्ट, सन्दर्भग्रन्थ सूची, नामानु-क्रमणिका, शोध का सारांश व महत्त्व-दिग्दर्शन, प्रथम आलेख, मशोधन, अन्तिम आलेख-संस्कृत हस्तलेखों के पठन एवं अन्तर्राष्ट्रीय लेखन-चिह्नों के पन्चय ।
5. हस्तलेखों के पठन की समस्याएं व मूलपाठ के अध्ययन की तकनीक, संस्कृत के हस्तलिखित ग्रन्थों व सूची-पत्रों का इतिहास ।
6. लिपियां—ब्राह्मी, शारदा, नवारी, बंगाली तथा अन्य लिपि (दक्षिणी लिपि) का नामान्वय ज्ञान तथा किसी एक में लिप्यन्तर की योग्यता । (यह प्रश्न अनिवार्य नहीं किया जाना चाहिए) ।
7. रोमनलिपि में अभ्यासान्वय एक अंश दिया जाना चाहिए ।

टिप्पणी—लिपियों तथा हस्तलिखित ग्रन्थों के अध्ययन का अध्ययन काल में कम से कम दो हस्तलेख भाण्डागारों में जाना आवश्यक है ।

उल्लेखनीय भाण्डागार ये हैं—

1. भण्डारकर ओरियन्टल रिसर्च इंस्टीट्यूट, पूना ।
2. सरस्वती महल, पुस्तकालय, नंजोर ।

3. एजियाटिक सोसाइटी पुस्तकालय, कलकत्ता ।
4. ओरियंटल इंस्टीट्यूट, बडौदा (गुजरात) ।
5. संस्कृत कलेज लाइब्रेरी, कलकत्ता ।
6. नरस्वती भवन, संस्कृत विश्वविद्यालय कलकत्ता ।
7. रघुनाथ टेंपल पुस्तकालय, जम्मू ।
8. ओरियंटल रिसर्च इंस्टीट्यूट, जोधपुर ।
9. एल.डी. इंस्टीट्यूट, अहमदाबाद ।
10. राज लाइब्रेरी, दरभंगा (बिहार) ।

अवधेयक—इस पत्र के लिए निर्धारित आंतरिक मूल्यांकन के 50 अंको में से 25 अंक गृह कार्य व 25 अंक शोध भाण्डागारों में जाकर अव्ययन करने हेतु निर्धारित हैं ।

संदर्भ ग्रन्थ :

1. डॉ. उदयभानुसिंह—अनुसंधान का विवेचन ।
2. डॉ. विनय मोहन शर्मा—शोध-प्रविधि ।
3. डॉ. सावित्री सिन्हा व विजयेन्द्र स्नातक—“अनुसंधान की प्रक्रिया” ।
4. डॉ. सरनामसिंह शर्मा—“शोध प्रक्रिया और विवरणिका” ।
5. डॉ. देवराज उपाध्याय—“साहित्य एवं शोध-कुछ समस्याएँ”
6. डॉ. एस.एम. कावे—भारतीय पाठालोचन की भूमिका (हिन्दी अनुवाद) ।
7. डॉ. मिथिलेश कात्रि—पाठालोचन-सिद्धांत और प्रक्रिया ।
8. डॉ. बी.एम. मुकयनकर—“महाभारत” भूमिका ।
9. डॉ. जी.एच. भट्ट—रामायण-भूमिका ।
10. डॉ. विश्वबन्धु—वदिक पदानुक्रम-कोष-भूमिका ।
11. डॉ. बी. राघवन्—न्यू केटेलोगन् केटेलोगोरम-भूमिका ।
12. डॉ. गौरीशंकर—संस्कृत ज्ञानानुशीलन ।
13. डॉ. उदयभानु सिंह—अनुसंधान के मूल तन्त्र ।

14. Anderson Dustion—Thesis & Assignment writing & Poole.
 15. डॉ. सत्येन्द्र—पांडुलिपि-विज्ञान ।
 16. गोरीशंकर हीराचन्द्र श्रोभा—प्राचीन लिपिमाला ।
 17. Meedonell—India's Past.
-

MINUTES OF THE MEETING OF THE ADHOC
COMMITTEE OF COURSES IN DRAMATICS HELD
ON 5.3.1983 AT 12.00 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT, UNIVER-
SITY CAMPUS. JAIPUR.

Present :

1. Shri Vijay Mathur (Convener)
2. Prof. G.N. Das Gupta.
3. Dr. (Miss) H. Prabhu.
4. Dr. B.L. Sharma

Note : Prof. R. Subba Rao Could not attend the meeting.

1. Shri Vijay Mathur, Head, University Deptt. of Dramatics, Jaipur was unanimously appointed as Convener of the Committee.

2. The Committee prepared the statements of qualifications and teaching experiences etc. of teachers received from the university teaching departments, University Colleges, affiliated institutions and other Universities for inclusion in the revised panel of examiners. (Vide Appendix I).

3. The Committee Could not Consider the item as the reports of examiners and question papers set for the examination of 1982 were not made available to the Committee.

4. The Committee recommended the Courses of study and text books in the Subject for the various examinations together with the relevant additions and/or alterations to the regulations and ordinances.

Certificate Course of 1984 —No change.

The Committee Strongly feels that the Certificate Course should be scrapped out and Diploma Course in Dramatics should be introduced. Various aspects regarding new Course was discussed in details. (Vide Appendix II).

The duration of the Diploma Course should be two years.

The Committee framed a broad outline of the Syllabus, the details of which has to be worked out.

The Certificate, experience of staff has been suggested in the Note.

5. The Committee recommended to constitute an Advisory Committee to revise the Courses of Study. (Appendix III)

6. The translation work will be done by the Committee after adoption of the new Syllabus of Diploma Course.

The meeting ended with a vote of thanks to the Chair.

Vijai Mathur
Convener
Adhoc C.O.C. in Dramatics.

APPENDIX I

Panel of Examiners

Internal : 1. Sh. Vijai Mathur.

External :—

1. Sh. J.N. Kaushal	N. Delhi
2. Sh. P. Pathak	"
3. Sh. Manohar Singh	"
4. Sh. R.B. Sharma	"
5 (Miss) H. Praphu	Jaipur
6. Sh. V. Rama Murti	Bangloor
7. Sh. S. Subba Rao	N. Delhir
8. Sh. Pankaj Saxena	"
9. Sh. G.N. Das Gupta	"
10. Sh. Subhash Udgata	"

APPENDIX II

The syllabus should be framed in such a way that the stress of teaching lies basically on Acting, with relevant coverage of dramatic literature, theatre techniques (design and craft) and production techniques.

Nine months out of one year will be available for teaching and other activities. There will be approximately 170 working days for classes and rehearsals and 15 days for productions and examinations. Total hours available for classes will be round about 850 hours at the rate of 5 hours a day and that for rehearsals a 300 hours at the rate of 2 hours a day in average.

Three main departments :

- I. Acting
- II. Dramatic Literature
- III. Design, technique, crafts.

Subjectwise division of timing :

I. Acting :—

Acting practical, improvisation
Acting Theory, Mime.
Voice and Speech, yoga.
Physical exercise etc. 400 hours

II. Dramatic Literature :—

History, Development and
study of Literature :—

Classical India Drama
Contemporary India
Drama Western
Drama.

150 hours

III. Design, techniques, crafts :—

Scenic design and set construction including Model making

Costume Design

Make-up

Lighting

Productions techniques.

Stage management. 200 hours

IV. Film, Art Appreciation and workshops.

100 hours

Division of Marks :

1. Acting	400
2. Dramatic Literature	150
3. Theatre Techniques	200
4. Viva	100
5. Additional Subject	50
6. Participation to productions.	100
	—
Total :	1000
	—

Details of Division of Marks :

Acting

Acting Practical	200
Voice & Speech	75
Acting Theory	50
Movement	75

Dramatic Literature :

C.I.D.	50
M.I.D.	70
W.D.	30

Theatre Techniques :

Scenic Design	50
Costume Design	35
Lighting	35
Make-up	50
Production Techniques	30

Appreciation Courses : 50

(Additional Subjects)

Participation to production : 100

Viva-Voce 100

Mode of Examination :

Acting Theory, dramatic literature. discussion or written

Scenic Design, Costume design. Project work

All other subjects Practical

Viva Voce Viva (oral)

Participation in production Assessment by staff

Pass Marks :

40% on individual subject

50% on subject heads

50% on aggregate

Extension Lectures :

Traditional Forms

Martial and free movements

Acting and Speech

Contemporary trend in Indian Theatre :—

Playwrights, presentation, forms, styles etc.

And on other subject of interest.

Productions :

Two major productions (One realistic, one stylised)
Time for preparation 6-8 weeks.

Two short plays or scenes from full length plays
Time for preparation 4 weeks.

Staff :

- | | | |
|----------------|-----|---|
| 1. Professor | One | With specialisation on any two out of the three subject heads. |
| 2. Reader | One | |
| 3. Lecturer | One | Specialisation in one out of the above three subjects with working (knowledge) experience on one more subject. |
| 4. Instructors | Two | With experience of handling any two of the following subjects : <ol style="list-style-type: none"> 1. One—with experience of Lights, Sound, Set Construction, properties. 2. One—with experience of movement, make-up, speech, improvisation. |

Intake : Maximum Number-15

Name recommended for Extension Lecturers, visiting directors, examiners etc.

On Literature, history, background, development, traditional forms :

Dr. Suresh Awasthi
Sh. N.C. Jain

Sh. Haviv Tanveer
Sh. B.V. Karanth
Sh. Rudra Prasad Sengupta
Sh. Shyamanand Jalan
Sh. Mohan Maharishi
Sh. D.R. Ankur
(Mrs.) Kirti Jain

Acting, Speech, Movement :

Sh. Roshan Seth
Vajaya Mehta
Berry John
Panchanan Pathak
M.K. Raina
R.G. Bajaj
R.B. Sharma
Rita Kothari
Astad Daboo
Narendra Sharma
Manohar Singhi

Direction and Production :

B.M. Shah
Mohan Maharishi
Amal Alana
Rudra Prasad Sengupta
Bhanu Bharati

Design, Techniques, Crafts :

V. Ramamurthy
Nishar Allana
G. Panchal
Dev Mohapatra
H.V. Sharma
G.N. Dasgupta
S. Subba Rao
S.B. Kulkarni
Robin Das
Subhas Udgate
Pankaj Saxena

dering their wider experiences in more than one field.

If the examiners for any particular Subjects as per list is not available, any member out of the list may be invited to serve as external examiner as all of the members listed have more than 5 years.

Question of establishing a Repertory Unit under the department of Dramatics may be considered for wider interest of the outgoing students of the department.

Tentative budget (Annual)

Production	Rs. 50,000/-
T.A./D.A. to visiting Professors & Directors	Rs. 10,000/-
Fees for visiting guests	Rs. 20,000/-
Maintenance of Equipments	Rs. 3,000/-
Lighting Equipments	Rs. 10,000/-
Sound Equipments	Rs. 10,000/-
Depreciation Fund	Rs. 5,000/-
Contingency	Rs. 5,000/-
Stationary and Teaching aid material	Rs. 10,000/-
Library	Rs. 30,000/-
Staff Salary-Faculty members, Office staff.	Rs. 1,25,000/-
	<hr/>
	Rs. 2,38,000/-

(Say Rs. 2.38 lakhs).

10% increase in very Subsequent year

1. Scholarships to students ?

Staff Consist of :

Teaching :

1.	Proffessor	1
2.	Reader	1
3.	Lecturer	1

Non-Teaching

4.	Instructors	2
5.	Carpenter	1
6.	Assistant	1
7.	Typist Clerk	1
8.	Wardrobe Cum Store Incharge	1
9.	Sweeper	1
10.	Chowkidars	2
11.	Peon-Cum-Attendant	1

The University Should Constitute an Advisory Committee to help the department in day-to-day work.

Qualification for Staff :

(1) Professor (Head)

Essential Qualifications.	Diploma in Dramatics from the National School of Drama or any other recognised Institute with 3 years duration
------------------------------	---

Or

M.A. in Literature

Essential
Experience

(a) 8-10 years teaching experience, on any two of the following three subject heads :—

- Acting.
- Dramatic literature,
- Theatre techniques.

(b) Should have directed 10 plays.

(c) Administrative experience of 5 years

Knowledge of Hindi Essential

Age.

50 as on

(2) Reader :

Essential
Qualification

as above (from proforma)

Essential
Experience

5-8 year teaching experience, other being same as provided

(3) Lecturer :

Essential
Qualifications

Diploma in Dramatics from the National School of Drama or any equivalent Institute (under 3 years duration course).

Or

M.A. in Literature.

Essential
Experience

(a) At least 5 years teaching experience of Acting or dramatic literature or theatre techniques.

(b) Should have directed 5 plays.

Desirable

(a) Capacity to teach more than one subject

(b) Should have conducted at least 5 theatre workshops.

(c) Administrative experience of at least 2 years.

Knowledge of Hindi essential.

Age.

40

(4) Instructors :

Essential
Qualifications

B.A. or B.Sc. with 2 years
experience

Or

School final with 10-12 years
experience.

Essential
Experience

Should have experience on two
fields out of four mentioned
below :—

Group A Improvisation. Move-
ment. Speech. Make-
up.

Group B Stage Lighting (with
electrical competency
certificate from licen-
sing authority), set
construction, handling
of P.A. & Audiovisual
equipments. Property
making.

Ability to express in Hindi.

Desirable

Attached with a Drama In-
stitute, with experience of
practical demonstration of the
subjects mentioned above.

Age

40 years.

APPENDIX III

Proposed names for the Advisory Committee

1. Sh. Rudra Prasad Sen Gupta
Nandikar
47/1, Shyam Bazar Street
CALCUTTA.
2. Sh. Tarun Ray
Head
Department of Dramatics,
Ravindra Bharti University,
CALCUTTA
3. Sh. Amal Allana
4. Sh. Whce Rama Murti
5. Sh. K.M Santaka
6. (Miss) H. Prabhu
JAIPUR.
7. Sh. G.N Das Gupta
National School of Drama
Bahawalpur House
Bhagwan Das Road, New Delhi.
8. Sh. V.V. Karant
BHOPAL.

MINUTES OF THE MEETING OF THE ADHOC
COMMITTEE OF COURSES IN SINDHI HELD ON
THE 11TH MARCH 1983 AT 12.00 NOON IN
THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Professor Ram Ahuja (Convener)
2. Mr. N.N. Gidwani
3. (Mrs.) Sushila Motwani

1. The Committee scrutinized the names of teachers for inclusion in the revised panel of examiners and included some new names (Appendix I) in the Panel of Examiners.

2. The Committee scrutinized the comments of examiners given in their reports. It was decided that the University may be requested to get the question-papers printed by a Sindhi press and not by an Urdu press as was done in the 1982 examinations.

3. The Committee decided to recommend the following courses of study and text-books for the various examinations of 1985 :

(i) Pre-University Examination—1985

—No change

(ii) I Year T.D.C. (Pass) Course Examination—1985.

—No change

(iii) II Year T.D.C. (Pass) Course Examination—1985.

(i) Paper I-Prose —The book 'Uchhal' by Hazari Singh Ajwani be prescribed instead of 'Vasant Varkha' by Tirath Vasant.

(ii) Paper II—No change.

(iv) III Year T.D.C. (Pass) Course Examination—1985.

(i) Paper I-Poetry —Only Poems Nos. 1,3, 5 and 6 be prescribed instead of 3,4,5, and 7 in “Lateefi Lat” by Fateh Chand Vaswani.

(ii) Paper II—No change.

4. On the information given by (Mrs.) Sushila Motwani (vide Appendix-II) that Government College, Ajmer has started M.A. (Previous) classes in Sindhi from the year 1982-83 with the permission of the Govt., it was resolved that subject to the permission of the University (for starting M.A. (Previous) classes in Sindhi) the courses recommended to be introduced from the year 1984 may be introduced retrospectively from the year 1983.

5. Resolved that only regular students may be permitted to offer Dissertation as Paper IX in M.A. (Final) Sindhi from the 1984 examination and onwards. The private candidates may be permitted to offer another paper in lieu of the Dissertation. The name of this paper be communicated by the Convener to the University in consultation with (Mrs.) Sushila Motwani and Dr. M.K. Jetly.

After the above deliberations, the meeting ended with a vote of thanks to the Chair.

(Ram Ahuja)
Convener

Adhoc Committee of Courses in
Sindhi, University of Rajasthan,
JAIPUR.

APPENDIX I

Names of teachers to be included in the Panel of Examiners :

1. Dr. Dayal 'Asha'
Head of the Sindhi Department,
Chandi Bai College.
ULHASNAGAR (Bombay).
2. Dr. Motilal Jotwani
Head of the Sindhi Department,
B-14, Dayanand Colony
Lajpatnagar.
NEW DELHI-110024
3. (Mrs.) Popti Hirandandani
Assistant Professor in Sindhi,
51, Sangita Building
Behind Telephone Bhawan.
COLABA (Bombay).
4. (Mrs.) Meena Rupchandani
Assistant Professor in Sindhi,
Chandi Bai College.
ULHASNAGAR (Bombay).
5. Mr. Satramdas Jairiasinghani
Assistant Professor in Sindhi.
Sail Bhavan
Vat'yaj
AHMEDABAD-380013.
6. Dr. (Miss) Shanti Mehtani
Lecturer in Philosophy.
Kanoria Mahila Mahavidyalaya
JAIPUR (Rajasthan).

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN ZOOLOGY HELD ON 25.3.1983 AT
12.00 NOON IN VICE-CHANCELLOR'S SECRE-
TARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Prof. Naresh Singh (Convener)
2. Prof. C.R. Kukar
3. Dr. P.R. Ojha
4. Dr. B.G. Kapoor

1. Under Section 24E (8) of the University Act, the Board Unanimously *appointed* Shri Naresh Singh, Vice-Principal and P.G. Head in Zoology, M.S.J. College, Bharatpur as the Convener of the Board for the remaining term.

2. The Board discussed thoroughly the draft syllabus of Environmental Biology to be included as special paper in M.Sc. Final and approved the draft Syllabus as per appendices I & II.

3. The members of the Board expressed their feelings that in view of the T.R.F. scheme of U.G.C. being applicable for M.Phil. studies (basic U.G.C. grants) the V.C. may be requested to use his influence to get M.Phil. classes opened at the University Deptt. of Zoology and P.G. Departments of Zoology in affiliated colleges.

The meeting ended with a vote of thanks to the Chair.

Sd.-Naresh Singh
(Convener)

APPENDIX I

Minutes of the meeting of the Committee appointed to frame the post-graduate course for special paper of Environmental Biology in Zoology to be introduced at M.Sc. Final level from the session 1983-84 vide Faculty of Science Res. No. 4 (2) (a) dated 21st May, 1982 held on the 7th December, 1982 at 11 A.M. in the University Office.

All the following members of the Committee were present :

1. Prof. S.C. Saxena, Convener.
2. Prof. A.S. Kapoor, Head of University Zoology Department.
3. Shri R.K. Goel, Vice Principal and Head of the P.G. Deptt., of Zoology, Alwar.
4. Shri Naresh Singh, Head of Department of Zoology, Bharatpur.
5. Shri Y.H. Alambain. Convener Board of Studies in Zoology and Vice Principal and P.G. Head of Zoology, Bikaner.
6. Dr. P. Bakre, Lecturer in University Department of Zoology (Teaching Ecology at M.Sc. level).

1. The course framed by Prof. S.C. Saxena was discussed. Prof. Kapoor and other members desired that the syllabus be modified in the light of following suggestions.

- (i) Dr. Bakre who is proceeding to Delhi to attend short term course on landscape planning and Environmental Conservation be requested to consult the syllabus of J.N. University, take the opinion of other Environmentalists and the relevant portions from the syllabus be included in the course.

(ii) The following topics should also be included :

- (a) Environment and cell
- (b) Environmental physiology
- (c) Space Ecology
- (d) Environmental Health
- (e) Environmental Toxicology
- (f) Urbanisation and Industrialization.

2. The modified revised course be placed in the next meeting of the Committee for final discussion.

3. Another meeting of the Committee be called within a month to give final shape to the course.

The meeting ended with a vote of thanks to the Chair.

S.C. Saxena
Convener.

APPENDIX II

Minutes of the meeting of the Committee appointed to frame the post-graduate course for special paper of Environmental Biology in Zoology to be introduced at M.Sc. Final level from the session 1983-84 vide Faculty of Science Res. No. 4 (2) dated 21st May, 1982 held on the 8th January 1983 at 11 A.M. in the Vice-Chancellor's Secretariat, University Campus, Jaipur.

Four members of the Committee were present.

The following decisions were taken :

1. The members went through the detailed revised proposed course and discussed it thoroughly. After having satisfied themselves that the suggestions made by Professor A.S. Kapoor and other members in the last meeting have been fully incorporated in the revised course, the Committee approved the course which includes Environmental Biology Papers I and II and the Practical based on these papers. A copy of the course is enclosed herewith as Annexure 'A'.
2. Further in view of the growing consciousness about the environment in the world, the members felt that the special paper of Environmental Biology at M.Sc. (Final) level must be introduced from the session 1983-84. This will be a positive step to develop interest in 'Environment' in the younger generation of the country.

The meeting ended with a vote of thanks to the Chair.

S.C. Saxena
(Convener)

ANNEXTURE A

Environmental Biology Paper I

1. Systems analysis including models in environmental biology.
2. Impact of environment at cellular level : Cellular interaction with environment.
3. Environmental Physiology.

Metabolism rate and body size. Basal metabolism and climatic adaptation. Hybernation and aestivation, Poikilotherms and Homeotherms, Asphyxic responses. Responses to temperature, & pressure. Haematological changes. Thermal properties of water and survival limits. Acclimatization.

4. Development and evolution of ecosystems. Causes and kinds of succession. Diversity and productivity in relation to stages of succession and development.

5. A detailed Study of different ecosystems :

Study will include biotic and abiotic components and their interrelationships, productivity and adaptations of animals.

A. Terrestrial ecosystems :

- (i) Grasslands including grazing lands.
- (ii) Forests : Characteristics of alpine, temperate and tropical forests. Comparison of fauna and phytosociological attributes. Stratification. High altitude with special reference to Himalayan Ecology.
- (iii) Deserts : Types and ecological attributes of desert species. Adaptations.
- (iv) Taiga : Extent and ecological peculiarities.
- (v). Tundra : Ecological attributes of species adaptations.

B. Aquatic Ecosystems :

- (i) Freshwater : Lakes including salt lake ponds, streams, springs, rivers and marshes.
- (ii) Marine ecosystem : Zonation, Fauna, adaptation, ecological conditions.
- (iii) Estuarine : ecological peculiarities, adaptations including impact on fauna.

C. A general knowledge of space ecology.

6. Urban, rural and other man made ecosystems : their impact on animal life. Urbanization and Industrialization Socioecologic impacts; Urban man mobility.

Environmental Biology-Paper II

1. History of man and his cultural evolution in relation to impact on environment.

2. Management of Environment.

A. Natural resources, their conservation and development.

- (i) Agriculture and forestry including pest management.
- (ii) Wildlife reserves.
- (iii) Mineral resources.
- (iv) Aquaculture (Freshwater and Marine).
- (v) Energy resources.
- (vi) River basin.

B. Range management

C. Waste management

D. Land use

E. Desalination and weather modification.

3. Pollution (Monitoring, sources, effect and control).

A. Water

B. Air

C. Land

- D. Thermal
- E. Sound
- F. Radiation
- G. Industrial
- H. Chemical

4. Environmental Health :

- (a) Urban health problem. Impact of urbanisation stress, Behaviour pattern of health, Health status and Health management.
- (b) Rural health problem
- (c) Socioeconomic environment. Impact of weather, natural disaster; pollution water availability, food resources, safety in relation to human health.

5. Environmental toxicology :

Natural and man-made available toxicants occurring in the environment and their impact on animal life in different ecosystems. Safety measures.

6. Methodology for environmental analysis :

- (a) Monitoring
- (b) Analysis of physical and chemical factors.
- (c) Statistical analysis
- (d) Bioassay techniques.

Practicals

1. Water quality analysis (Physico-chemical parameters).

- | | |
|---------------------|---------------------------------|
| 1. Temperature | 7. Bicarbonate hardness |
| 2. pH | 8. Calcium |
| 3. Dissolved oxygen | 9. Magnesium |
| 4. Acidity | 10. Chlorides |
| 5. Hardness | 11. Sulphates |
| 6. Alkalinity | 12. Total and dissolved solids. |

2. Air quality monitoring for :

1. Settleable matter
2. Suspended particulate
3. SO_2 and
4. NO_x

3. Microscopic examination of water :

Indicators of pollution, planktons, benthic and littoral fauna and flora.

4. Bioassays of polluted waters using fish and other aquatic organisms :

5. Waste water analysis :

- | | |
|----------------------------|------------------------------|
| 1. Temperature | 7. Suspended solids |
| 2. pH | 8. Volatile solids |
| 3. Dissolved oxygen | 9. Biological oxygen demand. |
| 4. Acidity | 10. Chemical oxygen demand. |
| 5. Alkalinity | |
| 6. Total dissolved solids. | |

6. Sampling procedures and report on a case study.

7. Field trip to any of the following habitats :

1. Forest
2. Freshwater habitat
3. Marine habitat
4. Semiarid habitat
5. Desert.

(Students are expected to give complete ecological Report of the trip including ecosystem structures, indicators, dominants, and estimation of environmental degradation, if any).

MINUTES OF THE MEETING OF THE ADHOC
COMMITTEE OF COURSES IN GENERAL
EDUCATION HELD ON 26th JULY, 1982 IN
THE UNIVERSITY VICE-CHANCELLOR
SECRETARIAT, JAIPUR.

Present :

1. Prof. R.K. Kaul (Chairman)
2. Prof. R.C. Bhandari (Physics)
3. Prof. N.K. Singhi (Sociology)
4. Dr. M.C. Joshi (Botany-BITS, Pilani)
5. Dr. (Miss) Sarojini Gupta (Economics—
(Special Invitee)
6. Dr. C.L. Mahajan (Zool. Deptt.)
7. Dr. H.C. Bhartiya (Co-ordinator, General
Education).
(Prof. Ramakant (S.A.S. C.) and Dr. (Miss)
V.K. Grover (Chemistry) another special
invitee could not attend the meeting.)

The meeting began with the opening remarks of the Co-ordinator of General Education (Convener). He apprised the members of the Committee that the interest of students in this compulsory optional is continuously on the decline. This is evident from the number of students offering it and extremely poor attendance in General Education classes. It was also pointed out that the examination policy of the University towards this group of compulsory papers, i.e., provision of several chances to clear the papers without affecting the division, had largely contributed to the want of interest among students in those papers.

The committee, though apparently concerned about the deplorable state of affairs in General Education, regretted its inability to discuss it as this aspect of the subject was beyond its terms of reference.

The members of the Committee then, gave their observations on the existing Syllabi, and the reading material provided by the University for General Education. The members unanimously felt that the reading material in the form of the book (Samanya Shiksha Ki Pathya-Pustak—published in 1979 by the University) was inadequate in many respects and needed thorough revision and rewriting at several places before sending it for the next edition.

In respect of Social Sciences Prof. Singhi felt that there was too much emphasis on religions. He suggested that it could be replaced by sociological, political and secular orientation gainfully. In Unit '5' he wanted significant changes in the structure of Indian Society to be discussed with special reference to the minorities and the country side. In Unit '6' while discussing Cultural Renaissance equal attention be given to folk culture. He also felt the need of emphasising the role of mass media i.e. press, radio, T.V. etc.

Dr. Sarojini Gupta pointed out the need for updating the material on economic problems and achievements in India. This could as well apply to other units as and when required.

Natural Sciences :

Discussing Section 'B' (Natural Sciences) Professor Bhandari observed that the present Syllabus did not include any topics on Science in India before and after the independence. They should be included in the revised Syllabus. He also pleaded for including Chapters on 'Status of Matter' in Unit '2'.

Dr. M.C. Joshi felt that it appeared to him that the reading material was written with a casualness of the newspaper reporting. He emphasised the need for rewording the topic 'Pollution' in Unit '4' as 'Environmental Conservation' to give it a positive and wider perspective.

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The members unanimously agreed that 'Cybernetics' in Unit '3' could be deleted and the topic 'Automation and Bio-Engineering' be rewritten as 'computers and Bio-Technology'.

For revising and rewriting the reading material the Committee felt that teachers associated with General Education teaching be called upon to do the job. However, before sending the freshly prepared reading material to press, it should be approved by the Editorial Boards constituted for the purpose. The Committee went on to suggest the composition of the editorial boards as follows :

For Section 'A' (Arts and Social Sciences) :

1. Shri A.M. Ghose (Philosophy)
2. Dr. Sarojini Gupta (Economics)
3. Dr. Sulochna R. Raghava (Sociology)

OR

4. Dr. N.K. Baj (Sociology)
5. Dr. H.C. Tikkiwal (History)

For Section 'B' (Natural Sciences)

1. Dr. H.C. Bhartiya (Zoology)
2. Dr. D.R. Chaudhary (Physics)
3. Dr. K.K. Sharma (Botany)

It was recommended that the payment to the authors be made on the lines of 'Rajasthan Hindi Granth Academy.'

The meeting ended with a vote of thanks to the Chair.

(H.C. Bhartiya)
Co-ordinator, General Education.

हिन्दी पाठ्यक्रम मण्डल की द्वितीय बैठक दिनांक 5 मार्च, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न हुई।

उपस्थित :

1. डा० राजेन्द्र प्रसाद शर्मा (संयोजक)
2. डा० रणजीत
3. श्रीमती कान्ता मारवा
4. श्री होतीलाल भारद्वाज
5. डा० सत्येन्द्र चतुर्वेदी
6. डा० कन्हैयालाल शर्मा
7. डा० देवीप्रसाद गुप्त

(1) हिन्दी पाठ्यक्रम मण्डल ने डा० रामगोपाल गोयल के पत्र (परिशिष्ट 1) पर विचार किया तथा पाया कि उठाए गये मुद्दों पर पहले ही मण्डल ने विचार विमर्श कर लिया था और सम्पूर्ण विमर्श के पश्चात् ही निर्णय लिये गये थे, अब पुनः विचार के पश्चात् सर्व सम्मत से यह निर्णय लिया गया कि पत्र में उठाए गये मुद्दे सारहीन और अनावश्यक हैं। अतः इस पत्र पर कोई कार्यवाही अपेक्षित नहीं है।

(2) मण्डल ने संस्तुति की कि हिन्दी (मामान्य) प्रथम वर्ष की पाठ्य पुस्तकें यदि 1985 की परीक्षा के लिये विश्वविद्यालय द्वारा तैयार न हो पाएँ तो पंजीकृत प्रकाशकों से इन पुस्तकों के लिये Submission आमन्त्रित कर लिए जाएँ।

(3) पाठ्यक्रम मण्डल ने अपनी गत दिनांक 4-5 नवम्बर, 1982 के अन्तर्गत एम. ए. के सम्पूर्ण प्रश्न पत्रों के विभाजन पर विचार विमर्श कर उसे पुनः व्यवस्थित किया तथा एम. ए. पूर्वार्ध एवं उत्तरार्ध में परिशिष्ट 11 के अनुसार विभाजन करने की संस्तुति की। मण्डल ने संस्तुति दी कि उक्त विभाजन को संकाय एवं अन्य निकायों की स्वीकृति के पश्चात् मग 1985 से एम. ए. पूर्वार्ध के लिये तथा 1986 से एम. ए. उत्तरार्ध की परीक्षाओं के लिये लागू कर दिया जावे।

(4) प्रश्न पत्रों का Moderation (अनुसूचीयन) आवश्यक रूप से किया जाए ।

(5) पाठ्यक्रम मण्डल की सर्वसम्मति संस्तुति है कि परीक्षा समिति के सदस्यों को परीक्षा कार्य का पारिश्रमिक मिले ।

संयोजक की धन्यवाद प्रस्ताव के बाद बैठक विरजित हुई ।

(राजेन्द्र प्रसाद शर्मा)

संयोजक

परिशिष्ट 1

प्रेषक : डा० रामगोपाल गोयल,

59 शास्त्री नगर, अजमेर

प्रतिष्ठा में,

श्रीयुन् कुलपति महोदय,
राजस्थान विश्वविद्यालय,
जयपुर ।

विषय : हिन्दी पाठ्य क्रम मण्डल द्वारा पाठ्यपुस्तकों के निर्धारण में अनियमिततायें बरतने एवं दुर्भाग्यपूर्वक पी. यू. सी. के पाठ्यक्रम से अग्निपर्व हटा देने के सम्बन्ध में ।

महोदय,

उपर्युक्त विषय पर निवेदन है कि पी. यू. सी. सामान्य हिन्दी के पाठ्यक्रम में मेरे द्वारा रचित “अग्निपर्व” नामक उपन्यास सत्र 1984 की परीक्षा से हटाकर एक अन्य पुस्तक “फौनाद का आदमी” लगाई गई है। पाठ्यक्रम मण्डल की दिनांक 18 19 नितम्बर 1981 के पैरा नं. 9 में इनका कारण बताया गया है कि नीम का याना के एक प्राध्यापक ने इसकी जिज्ञास की थी। इस सम्बन्ध में विनम्र निवेदन है कि “अग्निपर्व” हिन्दी साहित्य जगत में चर्चित पुस्तक है और हिन्दी की प्रतिष्ठित पत्रिकाओं यथा—प्रकरण (दिल्ली) समीक्षा लोक (पटना) कादम्बरी आदि अनेक पत्रिकाओं में समीक्षित है तथा डा० रामदरश मिश्र, श्री विष्णु प्रभाकर आदि अनेक लघु प्रतिष्ठित साहित्यकारों द्वारा तथा पाठ्यक्रम समिति के सदस्यों द्वारा भी अनुशंसित है। उक्त पुस्तक राष्ट्रीय एकता—हिन्दू मुस्लिम धार्मिक सहिष्णुता एवं सांस्कृतिक मूल्यों की दृष्टि से बहुचर्चित है। किसी प्रकार के साथ जुड़े निहित स्वार्थवश किन तरह छद्म पूर्वक एक उत्तम कृति को पाठ्यक्रम से हटाया जाना है और उसके स्थान पर निहित स्वार्थवश किनी प्रकाशक की नानान्वित करने की दृष्टि से मनोवृत्ति अपनाई जाती है, यह इनका एक ज्वलन्त उदाहरण है। यह तथ्य ध्यान देने योग्य है कि श्री भूपसिंह यादव उन समय एक अस्थायी प्राध्यापक था जो राजकीय सेवा में लगा ही था। इन व्यक्ति ने नीम का याना में ही जिज्ञा अजित की है और मण्डल के ही सदस्य का शिष्ट रहा है। यह निर्विवाद तथ्य है कि पाठ्यक्रम मण्डल के ही सदस्य के कहने से उसने उक्त बेवृत्तिवाद पत्र लिखा है। क्योंकि पाठ्यक्रम मण्डल का

एक सदस्य नीम का घाना महाविद्यालय का प्रध्यापक है। कला-सकाय में जहां हिन्दी विद्वान प्रवक्तागण भाग लेते हैं, कभी किसी ने इस पुस्तक पर आज तक आलोचन नहीं किया है। निहित स्वार्थवश किसी बड़े प्रकाशक को लाभ पहुँचाने के लिये सत्र 1984 की परीक्षा के लिये अनेक पुस्तकें निर्धारित की गई है एक छोटे प्रकाशक को आर्थिक संकट में डालना कहां तक उचित है।

पाठ्यक्रम समिति जब स्वयं ही यह मानती है कि पी. यू. सी. के परीक्षार्थियों की संख्या अति अल्प है और सामान्य पाठ्यपुस्तकें जब विश्व-विद्यालय द्वारा तैयार करानी है तब केवल एक वर्ष के लिए सन् 1984 की परीक्षा के लिए केवल "अग्निपर्व" पुस्तक को हटाना कहां तक उचित है। आने दिनांक 28 9-82 के पत्र के अनुसार (आईएम नं. 3) "अग्निपर्व" पुस्तक को हटाने संबंधी मण्डल का निर्णय अकादमी परिषद् (निर्णय संख्या 24 दिनांक 2/3 नवम्बर 1981) व सन्डिकेट (निर्णय संख्या 2 दिनांक 16 अप्रैल 1982) द्वारा अस्वीकृत किया जा चुका है। तदनुसार सन्डिकेट ने पी. यू. सी. के सामान्य हिन्दी के पाठ्यक्रम को बदलने के संबंध में अपनी 27/28 मई 1982 में लिये गये निर्णय के अन्तर्गत अस्वीकृत किया है। अतः उपर्युक्त विन्दुओं को ध्यान में रखकर पी. यू. सी. के सामान्य हिन्दी के पाठ्यक्रम सत्र 1984 की परीक्षा में से "अग्निपर्व" न हटाया जाकर पाठ्यक्रम में लगा रहने दिया जाने की कृपा करें।

मैं एक और विन्दु पर भी आपका ध्यान आकृष्ट करना चाहता हूँ कि पाठ्यक्रम मण्डल ने अपने निहित स्वार्थवश लगभग 3-4 प्रकाशकों में ही पी. यू. सी. प्रथम वर्ष टी. डी. सी. से एम. ए. तक के पाठ्यक्रम की समस्त पाठ्य पुस्तकों को बांट दिया है। यथा अजमेरा बुक कम्पनी जिसकी नौ पुस्तकें लगायी गई है। इसी तरह पंचशील प्रकाशक (6 पुस्तकें), कालेज बुक डिपो, एवं मलिक एण्ड कम्पनी जयपुर की पुस्तकें लगाई गई हैं। इन प्रकाशकों के स्वयं के अन्य नामों से सहयोगी प्रकाशन है, जिनके नामों से पुस्तकें लगी है। यथा अजमेरा बुक कम्पनी का कार्डन बुक डिपो/पंचशील प्रकाशन का ग्राम प्रकाशन आदि। इन प्रकाशकों से मण्डल के सदस्य उनके लेखक आदि के रूप में घनिष्ठ रूप से सम्बद्ध है और स्वयं लाभान्वित होते हुए उनको किम तरफ लाभ पहुँचाते हैं इसका एक उदाहरण ध्यान देने योग्य है। तृतीय वर्ष टी. डी. सी. हिन्दी साहित्य की निबन्ध पाठ्य पुस्तक 'गद्य निकष' के नाम से अजमेरा बुक कम्पनी की तीन वर्ष तक लगी हुई थी। अब अजमेरा बुक कम्पनी के तहत सहायक फर्म नाईन बुक डिपो के नाम से सत्र 1984 की

परीक्षा के लिये 'गद्य प्रभा' नामक पुस्तक स्वीकृत की गई है। मैंने स्वयं अपने द्वारा सम्पादित पुस्तक "निबन्ध नवनीत" टी. डी. सी. तृतीय वर्ष के लिये हिन्दी निबन्ध पुस्तक के लिये प्रस्तुत की थी। जो निर्धारित पाठ्यक्रम अनुसार एक उत्तम पुस्तक है, किन्तु निहित स्वार्थवश उसे नहीं लगाया गया। अतः आपसे विनम्र निवेदन है कि ऐसी स्थिति में सत्र 1984 की परीक्षा के लिये टी. डी. सी. तृतीय वर्ष हिन्दी साहित्य के निबन्ध पाठ्य पुस्तक के लिये जितनी पाठ्य पुस्तकें प्रस्तुत की गई हैं, उनका अधिकारी विद्वानों द्वारा रिव्यू (Review) कराया जाकर पाठ्यक्रम में पुस्तक लगाने की कृपा करें।

3. मैं आपका ध्यान एक गम्भीर अनियमितता की ओर दिलाना चाहता हूँ। विदित हुआ है कि कुल सचिव द्वारा अपने पत्र 28-9 80 द्वारा 15 अक्टूबर 1982 को बुलाई गई कला संकाय की मीटिंग के साथ हिन्दी पाठ्यक्रम मण्डल की बैठक (5-6, 20, 21 मार्च 1982) का कार्यवाही विवरण (जिसमें सत्र 1984 की परीक्षा की पुस्तकें लगाई गई हैं) संलग्न नहीं था और कला संकाय की बैठक प्रारम्भ होने के पश्चात् उक्त विवरण वितरित किया गया। अतः मण्डल द्वारा सत्र 1984 की परीक्षा के लिए निर्धारित पाठ्य-पुस्तकों पर विचार ही नहीं हो पाया था। तथा सदस्य इन अनियमितता का विरोध ही करते रह गये थे। ऐसी स्थिति में कला संकाय द्वारा उक्त पाठ्य पुस्तकों का स्वीकृत मान लिया जाना आपत्तिजनक है। अतः उपर्युक्त विन्दुओं पर गम्भीरता पूर्वक विचार करके सत्र 1984 की परीक्षा के लिए हिन्दी विषय पाठ्य पुस्तकों की गोनीय ढंग से निष्पक्ष हिन्दी के अधिकारी विद्वानों द्वारा रिव्यू (Review) कराके पाठ्यक्रम में निर्धारित कराने का कष्ट करें। पाठ्य पुस्तकों की रिव्यू करने की पद्धति माध्यमिक शिक्षा बोर्ड आदि निकायों में सफलता पूर्वक प्रचलित भी है।

यदि ऐसा सम्भव नहीं हो तो कम से कम "अग्निपर्व" को पी.यू.सी. के सामान्य हिन्दी के पाठ्यक्रम में से न हटाया जाने व तृतीय वर्ष हिन्दी साहित्य में गद्य में निबन्ध नवनीत (प्रकाशन, अभिनव प्रकाशन अजमेर) को लगाया जाने का कष्ट करें।

सधन्यवाद।

भवदीय,

दिनांक : 18-12-1982

(डा० रामगोपाल गोयल)

प्रवक्ता हिन्दी

राजकीय महाविद्यालय, अजमेर

प्रतिलिपि : श्रीयुत डॉ० वैराठी साहव रजिस्ट्रार अकादमी अनुभाग, रा.
वि. वि. जयपुर के पास प्रेषित कर विनम्र निवेदन है कि निवेदक
के प्रतिवेदन पर गम्भीरता पूर्वक विचार करके समुचित एवं न्याय-
संगत निर्णय दिलवाने का कष्ट करें ।

परिशिष्ट 2

एम. ए. (पूर्वाद्ध)

एम. ए. (पूर्वाद्ध) एवं एम. ए. (उत्तराद्ध) की परीक्षाओं हेतु प्रश्न-पत्रों का विभाजन निम्न प्रकार रखा जावे :—

प्रथम प्रश्न पत्र—	गद्य साहित्य
द्वितीय प्रश्न पत्र—	मध्यकालीन काव्य
तृतीय प्रश्न पत्र—	प्राचीन काव्य
चतुर्थ प्रश्न पत्र—	आधारभूत भाषाएं तथा विशिष्ट साहित्यकार

(क) आधार भूत भाषाएं

- (1) संस्कृत
- (2) पालि
- (3) अपभ्रंश
- (4) राजस्थानी भाषा और साहित्य

(ख) विशिष्ट साहित्यकार

- (1) तुलसीदास
- (2) सूरदास
- (3) केशवदास
- (4) भारतेन्दु
- (5) जयशंकर प्रसाद
- (6) प्रेमचन्द

एम० ए० (उत्तराद्ध)

प्रथम प्रश्न पत्र : आधुनिक काव्य

द्वितीय प्रश्न पत्र : आलोचना के सिद्धान्त और हिन्दी साहित्य का इतिहास

तृतीय प्रश्न पत्र : भाषा विज्ञान, हिन्दी भाषा और देवनागरी लिपि

चतुर्थ प्रश्न पत्र : निबंध

पंचम प्रश्न पत्र : विशेष विषय कोई एक विषय)

- (1) काव्य शास्त्र
 - (2) हिन्दी नाटक का उद्भव और विकास
 - (3) हिन्दी उपन्यास का उद्भव और विकास
 - (4) नया हिन्दी काव्य
 - (5) लोक साहित्य
 - (6) ऐतिहासिक
-

आयुर्वेद अध्ययन मण्डल की दिनांक 14-6-83 को प्रातः 11 बजे कुलपति सचिवालय, विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न बैठक का कार्य-वाही विवरण ।

उपस्थिति :

1. वैद्य शंकर त्रिवेदी (संयोजक)
2. वैद्य रामप्रकाश स्वामी—अध्विष्ठाता आयुर्वेद संकाय
3. वैद्य तरहरि शास्त्री
4. वैद्य धनस्याम शर्मा
5. वैद्य अमर कान्त शर्मा
6. वैद्य वद्रीनारायण शर्मा
7. वैद्य लक्ष्मीनारायण शर्मा
8. वैद्य मोहन लाल भारद्वाज
9. वैद्य राम प्रताप शर्मा
10. वैद्य मुकुन्द विहारी शर्मा
11. वैद्य गौरी शंकर श्रोत्रीय
12. वैद्य हरि प्रताप शर्मा

1. विश्वविद्यालय के परिनियम 42 [एफ] [1] [2] और [3] के प्रावधानानुसार निम्नलिखित आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के निम्न रिक्त पदों पर 22 अगस्त, 1985 तक की शेष कालावधि के लिए नये सदस्यों की नियुक्ति की गई :—

समिति का नाम—

सदस्य का नाम :

1. रसशास्त्र संप्रदाय कल्पना—

वैद्य देवेन्द्र भट्ट,
द्वारकाधोश जी का मन्दिर,
चौड़ा रास्ता, जयपुर ।
(श्री छाजू लाल भारद्वाज के स्थान पर
बाह्य सदस्य)

2. मौलिक सिद्धान्त विषयक—

वैद्य बालुदेव शास्त्री,
अध्यक्ष मौलिक सिद्धान्त विभाग,
मोहिता आयुर्वेद कालेज, सादलपुर ।
(श्री जगन्नाथ व्यास सादलपुर के स्थान
पर अन्तः सदस्य)

3. द्रव्यगुण विषयक—

1. वैद्य ओम प्रकाश शर्मा,
रीडर—म. मो. मा. आयुर्वेद महा-
विद्यालय, उदयपुर ।
(वैद्य हनुमत्सहाय के स्थान पर अन्तः
सदस्य)

2. वैद्य राम पाल शास्त्री,
राष्ट्रीय आयुर्वेद संस्थान, जयपुर ।
(वैद्य मदन गोपाल गोड़, जयपुर के
स्थान पर अन्तः सदस्य)

3. वैद्य मदन गोपाल गोड़,
राष्ट्रीय आयुर्वेद संस्थान के समीप,
जयपुर ।
(वैद्य ईश्वरदास स्वामी के रिक्त स्थान
पर बाह्य सदस्य)

4. शरीर रचना विषयक—

1. वैद्य मोहन लाल भारद्वाज,
राष्ट्रीय आयुर्वेद संस्थान, जयपुर ।
(श्री जितेन्द्र कुमार भागवत के स्थान पर
अन्तः सदस्य)

5. रोग विज्ञान एवं विकृति विज्ञान
विषयक—

श्री राजेन्द्र प्रसाद भटनागर,
क्रिजिगियन स्पेशियलिस्ट,
रीजनल रिसर्च इंस्टीट्यूट ऑफ आयु-
र्वेद, उदयपुर ।
(श्री ओम प्रकाश शर्मा के स्थान पर
बाह्य सदस्य)

6. काय चिकित्सा विषयक—

श्री भवानी शंकर पालीवाल,
मदन मोहन मालवीय आयुर्वेद महा-
विद्यालय, उदयपुर ।

(श्री राजेन्द्र प्रकाश भटनागर के स्थान
पर अन्तः सदस्य)

7. शालाक्य तंत्र विषयक—

डॉ० शिव कुमार व्यास,
प्रिन्सिपल,
आयुर्वेद एवं यूनानी तिब्बिया कालेज,
अजमल खां रोड, करोल बाग, नई
दिल्ली-5.

(वैद्य श्री पूरण मल मिश्र के स्थान पर
वाह्य सदस्य)

8. अगदतंत्र विषयक—

वैद्य श्री दीनानाथ उपाध्याय,
रीडर, पुनर्वसु आयुर्वेद कालेज, नेताजी
सुभाष रोड, बम्बई-2

(डॉ. वाई. एस. घई के स्थान पर
वाह्य सदस्य)

2. विश्वविद्यालय अधिनियम की धारा 34(4) (iv) के प्रावधानान्तर्गत 1983 की आयुर्वेद संकायान्तर्गत सम्पादनीय परीक्षा के लिए परीक्षक चयन समिति पर संयोजक के अतिरिक्त अध्ययन मंडल के एक सदस्य वैद्य गौरी शंकर श्रोत्रिय म. मो. मा. आयुर्वेद महाविद्यालय, उदयपुर का निविरोध निर्वाचन किया गया ।

3. विश्वविद्यालय परिनियम 25(2) ए के प्रावधानान्तर्गत आयुर्वेद संकायान्तर्गत सम्पादनीय विभिन्न परीक्षाओं के लिए परीक्षक तालिका के निर्माण हेतु यह सर्व सम्मत निर्णय लिया कि कुलपति महोदय के आदेश दिनांक 29 मई, 1983 के आधार पर परीक्षकों की नियुक्ति परीक्षक पैनल से की जानी चाहिए ।

4. आयुर्वेद संकायान्तर्गत गठित विभिन्न विषयक शिक्षण एवं अनुसंधान समितियों के निर्णयों पर दिवार विमर्श किया गया ।

(क) अनुसंधान एवं शिक्षण समिति का नाम :

बैठक दिनांक :

1. मौलिक सिद्धांत संहिता संस्कृत इतिहास
विषयक । 21.3.83
2. शरीर रचना विषयक । 21.3.83
3. शरीर क्रिया विषयक । 21.3.83
4. रस शास्त्र भैषज्य कल्पना विषयक । 10/11.4.83
5. रोग विज्ञान एवं विकृति विज्ञान
विषयक । 23/24.3.83
6. अगतंत्र एवं व्यवहारायुर्वेद विषयक । 22.3.83
7. स्वस्थवृत्त विषयक । 22.3.83
8. प्रमूति स्त्री बाल रोग विषयक । 22.3.83
9. काय चिकित्सा विषयक । 24.83
10. शालाक्य तंत्र विषयक । 23.3.83
11. शल्य तंत्र विषयक । 23.3.83
12. द्रव्यगुण विज्ञान विषयक ।

(ख) परीक्षाएं :

1. ग्री-आयुर्वेद परीक्षा, 1985

2. आयुर्वेदाचार्य (बैचलर ऑफ आयुर्वेदिक मेडिसिन
एण्ड सर्जरी) परीक्षा :

(अ) प्रथम वर्ष परीक्षा, 1985

(ब) द्वितीय वर्ष परीक्षा, 1986

(स) तृतीय वर्ष परीक्षा, 1987

(द) चतुर्थ वर्ष परीक्षा, 1988

(य) पंचम वर्ष परीक्षा, 1989

3. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद), परीक्षा :

(अ) प्रथम खण्ड (प्रारम्भिक परीक्षा जून/दिसम्बर/1984-1986)

(ब) द्वितीय खण्ड (उत्तरार्द्ध परीक्षा जून/दिसम्बर 1986)

(ग) मण्डल को सूचित किया गया कि द्रव्यगुण विषयक आयुर्वेद शिक्षण एवं अनुसंधान समिति की बैठक का आयोजन समिति के सदस्यों के अनुपस्थिति रहने के कारण नहीं हो सका ।

I— मौलिक सिद्धांत संहिता विज्ञान संस्थान इतिहास विषयक आयुर्वेद अध्ययन एवं शिक्षण अनुसंधान समिति की दिनांक 21.3.83 को सम्पन्न बैठक की संस्तुतियों (परिशिष्ट I) को निम्न लिखित अभ्युक्तियों के साथ स्वीकार किये जाने की संस्तुति की गई—

1. मन्दर्भ : समिति की संस्तुति संख्या 1, 2 (i) (2) (3) (4) (5) (अ) (आ) (इ) (द) (क) को स्वीकार कर स्पष्ट किया गया कि—

(i) प्री-आयुर्वेद में 'संस्कृत द्वितीय प्रश्न पत्र' की वही योजना स्वीकृत की जावे जिससे वर्तमान में परीक्षा सम्पादित होती है अर्थात्

(अ) संस्कृत विषयक :

- | | |
|-------------------|--------|
| 1. व्याकरण | 50 अंक |
| 2. अनुवाद | 30 अंक |
| 3. अशुद्धि संशोधन | 20 अंक |

(ब) संस्कृत तृतीय पत्र :

वैद्यकीय सुभाषित साहित्य 100 अंक

उपयुक्त रीति से परीक्षा सम्पादित की जावे ।

(ii) 'अष्टांग संग्रह' के स्थान पर 'अष्टांग हृदय' नहीं रखा जावे ।

(iii) अष्टांगसंग्रह से मौखिक परीक्षा का कोई औचित्य नहीं है ।

II— शरीर रचना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की दिनांक 21.3.83 को सम्पन्न बैठक की संस्तुति (परिशिष्ट II) को निम्नलिखित अभ्युक्तियों के साथ स्वीकार करने की संस्तुति की गई—

(क) संदर्भ : समिति की संस्तुति की संख्या (1) (2) (i) (ii) को यथावत स्वीकार किया जाकर सूचित किया गया की मुद्रण संबंधी प्रूफ संशोधन डॉन फैकल्टी ऑफ आयुर्वेद कर रहे हैं ।

III— शरीर क्रिया विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की दिनांक 21.3.83 को सम्पन्न बैठक की संस्तुतियों (परिशिष्ट III) को निम्नलिखित अभ्युक्तियों के साथ स्वीकार किये जाने की संस्तुति की गई—

(क) सन्दर्भ—समिति की संस्तुति संख्या (1) (2) (i) (ii) (iii) को यथावत स्वीकार किये जाने की संस्तुति की गई ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या (3) (4)(5) 6) (7) (8) के लिए मण्डल की संस्तुति संख्या (5) (6) (7) (8) (9) (10) का अवलोकन किया जावे ।

IV— रसशास्त्र भैषज्य कल्पना-विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की दिनांक 10/11.4.83 को सम्पन्न बैठक की संस्तुतियों (परिशिष्ट IV) को निम्नलिखित अभ्युक्तियों के साथ स्वीकार किये जाने की संस्तुति की गई—

(क) सन्दर्भ :—समिति की संस्तुति संख्या (1) (2) (i) को यथावत स्वीकार किया ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या 2 (अ) (आ) (इ) (ऊ) तथा नीचे लिखे नोट को यथावत स्वीकार किये जाने की संस्तुति की गई ।

(ग) सन्दर्भ :—समिति की संस्तुति संख्या—तृतीय वर्ष आयुर्वेदाचार्य परीक्षा, 1987 के प्रसंग में रसशास्त्र एवं भैषज्य कल्पना की सैद्धांतिक एवं प्रायोगिक परीक्षा दोनों ही विषयों की सम्मिलित ली जावे । एतद् संबंधी पाठ्यक्रम में अशुद्धि संशोधन किया जावे ।

1. प्रथम पत्र-रसशास्त्र	100 अंक	} न्यूनतम उत्तीर्णाङ्क 100
2. द्वितीय भैषज्य कल्पना	100 अंक	
3. तृतीय पत्र प्रायोगिक	रस शास्त्र एवं 75	} न्यूनतम उत्तीर्णाङ्क 75
	भैषज्य क. 75	

(घ) आयुर्वेद वाचस्पति उत्तराद्ध परीक्षा, 1986 के संशोधन संबंधी प्रस्ताव संख्या 1, 2, 3, 5, 6, 7 को स्वीकार किया गया तथा क्रम संख्या 4. (एम. डी. में सप्लीमेन्ट्री परीक्षा) निरस्त किया गया ।

(च) सन्दर्भ :—समिति की संस्तुति संख्या (3) (4) (5)(6)(7) (8) के लिए मंडल की संस्तुति संख्या (5) (6) (7) (8) (9) (10) का अवलोकन किया जावे ।

V— रोग विज्ञान विषयक एवं शिक्षण अनुसंधान समिति की दिनांक 23-24/3-83 : को सम्पन्न बैठक की संस्तुतियों (परिशिष्ट V) को निम्न लिखित अभ्युक्तियों के साथ स्वीकार किया गया ।

(क) सन्दर्भ—समिति की संस्तुति संख्या (1) (2) (क) (ख) को यथावत स्वीकार किये जाने की संस्तुति की गई ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या 2 (अ) (ब) को निरस्त किया गया ।

(ग) सन्दर्भ :—समिति की संस्तुति संख्या 2 (ग) को स्पष्टीकरण के लिए समिति को पुनः प्रेरित किया जावे एवं तब तक की कालावधि के लिए वर्तमान पाठ्यक्रम को यथावत रखा जावे ।

(घ) सन्दर्भ :—समिति की संस्तुति संख्या (1)(4)(5) (6) (7) (8) के लिए मंडल की संस्तुति संख्या (5) (6) (7) (8) (9) (10) का अवलोकन किया जावे ।

VI— अग्रदत्त व्यवहारयुद्ध विषयक शिक्षण एवं अनुसंधान समिति की दिनांक 22-3-83 : को सम्पन्न बैठक की संस्तुतियों (परिशिष्ट VI) को निम्नलिखित अभ्युक्तियों के साथ स्वीकार किये जाने की संस्तुति की गई—

(क) सन्दर्भ—समिति की संस्तुति संख्या (1) को यथावत स्वीकार किया गया ।

(ख) सन्दर्भ—समिति की संस्तुति संख्या 2 (पैरा-1) तृतीय वर्ष आयुर्वेदाचार्य परीक्षा, 1987 को अस्वीकृत किया गया ।

(ग) सन्दर्भ—समिति की संस्तुति संख्या 2 के पैरा-1 को छोड़कर सभी इस आइटम के भी प्रस्तावों को यथावत स्वीकार किया गया ।

(घ) सन्दर्भ :—समिति की संस्तुति संख्या (3), (4) (5)(6)(7) (8) के लिए मंडल की संस्तुति संख्या (5) (6) (7) (8) (9) (10) का अवलोकन किया जावे ।

VII— स्वस्थवृत्त विषयक शिक्षण एवं अनुसंधान समिति की दिनांक 22-3-83 को : सम्पन्न बैठक की संस्तुतियों (परिशिष्ट VII) को निम्नलिखित अभ्युक्तियों के साथ स्वीकार किये जाने की संस्तुति की गई :—

(क) सन्दर्भ :—समिति की संस्तुति संख्या (1) (2) को यथावत स्वीकार किया गया ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) के लिए मंडल की संस्तुति संख्या (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) का अवलोकन किया जावे ।

VIII— प्रसूति तंत्र, स्त्री वाल रोग विषयक शिक्षण एवं अनुसंधान समिति की दिनांक 22-3-83 को : सम्पन्न बैठक में की गई संस्तुतियों (परिशिष्ट VIII) पर विचार विमर्श कर संस्तुति की गई—

(क) सन्दर्भ :—समिति की संस्तुति संख्या 1, 2 (क)(ख) को यथावत स्वीकार किया गया ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 के लिए मंडल की संस्तुति संख्या 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 का अवलोकन किया जावे ।

IX— कार्य चिकित्सा विषयक शिक्षण एवं अनुसंधान समिति के उपवेगन दिनांक 22-4-83 की : संस्तुतियों (परिशिष्ट IX) पर विचार विमर्श कर संस्तुति की गई :—

(क) सन्दर्भ :—समिति की संस्तुति संख्या 1, 2, को यथावत स्वीकार किया गया ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या 3 से 10 के लिए मंडल की प्रासंगिक संस्तुतियों का अवलोकन किया जावे ।

X— शालाक्य तंत्र विषयक शिक्षण एवं अनुसंधान समिति की दिनांक 23-3-83 को : सम्पन्न बैठक की संस्तुतियों (परिशिष्ट X) पर विचार विमर्श कर संस्तुति की गई :—

(क) सन्दर्भ :—समिति की संस्तुति संख्या 1, 2, (i) (3) को यथावत स्वीकार किया जाय एवं संस्तुति संख्या 2(2) को संकाय सम्मुख स्पष्ट किये जाने की संस्तुति की गई ।

(ख) सन्दर्भ :—समिति की संस्तुति 2 से 10 तक के लिए मंडल की प्रासंगिक संस्तुतियों को अवलोकन किया जावे ।

XI— शल्य तंत्र विषयक अनुसंधान एवं शिक्षण समिति की दिनांक 23.3.83 को सम्पन्न बैठक में की गई संस्तुतियों पर परिणाम XI विचार विमर्श कर संस्तुति की गई :—

(क) सन्दर्भ :—समिति की संस्तुति संख्या 1, 2 को यथावत स्वीकार किये जाने की संस्तुति की गई ।

(ख) सन्दर्भ :—समिति की संस्तुति संख्या 3 से 10 तक के लिए मंडल की प्रासंगिक संस्तुतियों का अवलोकन किया जावे ।

XII— द्रव्यगुण विज्ञान विषयक शिक्षण एवं अनुसंधान समिति का उपवेशन : समस्त सदस्यों की उपस्थित के अभाव में नहीं हो सका । अतः आयुर्वेद अध्ययन मंडल ने संबंधित विषय के पाठ्यक्रम को यथावत रखे जाने की स्वीकृति प्रदान करने की संस्तुति की ।

(5) आयुर्वेद संकाय की संस्तुति संख्या 10 दिनांक 11-12 जनवरी 1983 के सन्दर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, रसायन शालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण से संबंधित प्राचार्य, श्री प.रा. आयुर्वेद महाविद्यालय, सीकर के पत्र संख्या 1637/80-81 दिनांक 12.10.80 के संबंध में विभिन्न अनुसंधान एवं शिक्षण समितियों द्वारा लिये गये निर्णयों पर विचार विमर्श कर संस्तुति की गई :—

क्र.स. समिति का नाम : दिनांक.	संस्तुति
1. मौलिक सिद्धांत 21-3-83 संहिता विषयक ।	जहाँ पर स्नातक स्तर का अध्ययन अध्यापन होता हो उस महाविद्यालय में इन्टर्नशिप का केन्द्र होना चाहिए ।
2. शरीर रचना विषयक । 21-3-83	आयुर्वेदाचार्य पंचम वर्ष की परीक्षा जहाँ से उत्तीर्ण करते हो उसी महाविद्यालय में इन्टर्नशिप का केन्द्र होना चाहिए ।
3. शरीर क्रिया विषयक । 21-3-83	आयुर्वेद कॉलेज सीकर में उपलब्ध शैक्षणिकों के आधार पर इन्टर्नशिप की सुविधा दी जावे :

4. रसशास्त्र 10/11-4-83 निरीक्षण बोर्ड द्वारा जांच की संस्तुति के अनुसार स्वीकृति दी जावे ।
नैपज्य कल्पना विषयक ।
5. रोग विज्ञान 23/24-3-83 पंचम वर्ष का पाठ्यक्रम जहां लागू हो एवं विद्वति विज्ञान विषयक । पंचम वर्ष का पाठ्यक्रम जहां लागू हो एवं प्रायोगिक कमियां हेतु आवश्यक शैक्षणिक की पूर्ति देख कर इन्टरनॅशिप की स्वीकृति दे दी जावे ।
6. अगतंत्र व्यवहा- 22-3-83 पंचम वर्ष के अध्ययन अध्यापन की रायवेद विषयक । नुविधा एवं नाशन सामग्री हो, वहां इन्टरनॅशिप की स्वीकृति दी जानी चाहिए ।
7. प्रभूति तंत्र स्त्री रोग 22-3-83 सन्वद्धता प्राप्त आयुर्वेद महाविद्यालयों में नियमानुसार न्यूनतम रोगी शैक्षणिक की पूर्ति हो जाने पर इन्टरनॅशिप की स्वीकृति दी जावे ।
कौमारभृत्य विषयक ।
8. काय चिकित्सा । 2-4-83 राजस्थान विश्वविद्यालय से सन्वद्धता प्राप्त महाविद्यालयों इन्टरनॅशिप का केन्द्र हो मान्य होने चाहिए ।
9. स्वस्थवृत्त 22-3-83 पंचमवर्ष के छात्र जिस महाविद्यालय से परीक्षा उत्तीर्ण करते हैं उस महा- विद्यालय में इन्टरनॅशिप का केन्द्र मान्य होना चाहिए ।
विषयक ।
10. शालाक्य तंत्र 23-3-83 आयुर्वेद महाविद्यालय, सीकर को इन्टरनॅशिप केन्द्र की स्वीकृति, दी जाने की स्वीकृति ।
11. जल्य तंत्र 23-3-83 आयुर्वेद महाविद्यालय सीकर में 100 शैक्षणिक की व्यवस्था होने पर इन्- शिप की स्वीकृति दे दी जावे ।
विषयक ।

मंडल ने निश्चय कर संस्तुति की कि स्नातक स्तर के पूर्ण पाठ्यक्रम का जिस महाविद्यालय में अध्ययन अध्यापन होता है उस महाविद्यालय में इन्टरनॅशिप के केन्द्र की स्वीकृति दे दी जावे । उनलए श्री प. रा. आयुर्वेद महाविद्यालय, सीकर में इन्टरनॅशिप केन्द्र की स्वीकृति दिये जाने की संस्तुति की गई ।

7. आयुर्वेद संकाय की निम्न संख्या 13 (1) दिनांक 11/12 जनवरी, 83 के द्वारा अजोक्त कुमार, अध्यक्ष छात्रमंडल राष्ट्रीय आयुर्वेद संस्थान, जयपुर के प्रस्ताव संख्या 1 व 6 पर आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों के निर्णय पर विचार विमर्श किया गया :—

क्र सं	समिति का नाम.	दिनांक.	मंस्तुति सं.	संस्तुति.
1.	मौलिक सिद्धांत संस्कृत एवं इतिहास विषयक ।	21-3-83	4	अस्वीकृत
2.	शरीर रचना विषयक ।	21-3-83	4	„
3.	शरीर क्रिया विषयक ।	21-3-83	4	„
4.	रोग विज्ञान एवं विकृति विज्ञान विषयक ।	23/24-3-83	4	„
5.	रमजात्र एवं भैषज्य कल्पना विषयक ।	10/11-4-83	4	„
6.	अगतंत्र विषयक ।	22-3-83	4	„
7.	प्रसूति स्त्री रोग, बाल रोग विषयक ।	22-3-83	4	„
8.	काय चिकित्सा विषयक ।	2-4-83	4	„
9.	स्वस्थवृत्त विषयक ।	22-3-83	4	„
10.	शालाक्य तंत्र विषयक ।	23-3-83	4	„
11.	शल्य तंत्र विषयक ।	23-3-83	4	„

आयुर्वेद अध्ययन मंडल ने उपर्युक्त निर्णय के अनुसार प्रस्ताव सं. 1 एवं 6 को अस्वीकृत किये जाने की संस्तुति की ।

8. आयुर्वेद संकाय की निम्न सं. 14(3) दिनांक 11/12 जनवरी, 1983 के द्वारा श्री श्रीकृष्ण शर्मा, जयपुर के प्रस्ताव सं. 3 "सनातनोत्तर कलाओं में प्रवेश के लिए कम से कम एक वर्षीय प्री-आयुर्वेद पाठ अन्ति ही पाठ हो" पर निम्नांकित आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की निम्न दिनांक को सम्पन्न हुई बैठकों में निर्णय जो निम्न उद्धृत मंस्तुति संख्या में निहित है पर विचार विमर्श किया :—

क्र. स.	समिति का नाम.	दिनांक.	संस्तुति सं.
1.	मौलिक सिद्धांत संस्कृत व इतिहास विषयक ।	21-3-83	5
2.	शरीर रचना विषयक ।	21-3-83	5
3.	शरीर क्रिया विषयक ।	21-3-83	5
4.	रोग विज्ञान एवं विकृति विज्ञान विषयक ।	23/24-3-83	5
5.	रसशास्त्र भेषज्य कल्पना विषयक ।	10/11-4-83	5
6.	अगतत्र विषयक ।	22-3-83	5
7.	प्रभुति तंत्र स्त्री बालरोग विषयक ।	22-3-83	5
8.	काय चिकित्सा विषयक ।	2-4-83	5
9.	स्वस्थवृत्त विषयक ।	22-3-83	5
10.	जालाक्षय यंत्र विषयक ।	23-3-83	5
11.	जल्यतत्र विषयक ।	23-3-83	5

उपर्युक्त प्रस्ताव को स्वीकृत कर यह निर्णय लिया गया कि यह प्रस्ताव उन्हीं उपाधियों पर लागू होगा जहां पर भारतीय चिकित्सा केन्द्रीय परिषद के पाठ्यक्रम प्रारम्भ होने के बाद भी ग्री-ग्रायुर्वेद का पाठ्यक्रम लागू नहीं हुआ है ।

9. ग्रायुर्वेद संकाय की निम्न मंडया 15 दिनांक 11/12 जनवरी, 1983 के द्वारा श्री पूर्ण मल मिश्र, सादूनपूर के प्रस्ताव "जिस प्रकार मेडिकल संकाय में एम. डी. एम. एस. में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार ग्रायुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को एक वर्ष के हाऊस, जोब में मस्त रखते हुए प्रवेश देकर, 2 वर्ष बाद एम.डी. (वाचस्पति) फाइल परीक्षा देने का अधिकार दिया जाना चाहिए ।" पर ग्रायुर्वेदीय शिक्षण एवं अनुसंधान समितियों को निम्न विवरणानुसार सम्मन हुई बैठकों की संस्तुतियों पर विचार विमर्श किया—

क्रम	समिति का नाम.	दिनांक.	संस्तुति सं.
1.	मौलिक सिद्धांत संस्कृत एवं इतिहास विषयक ।	21-3-83	6
2.	शरीर रचना विषयक	21-3-83	6

क्र. सं.	समिति का नाम	दिनांक	संस्तुति सं.
3.	शरीर क्रिया विषयक ।	21-3-83	6
4.	रोग विज्ञान एवं विकृति विज्ञान विषयक ।	23/24-3-83	6
5.	रसशास्त्र एवं भैषज्य कल्पना विषयक ।	10/11-4-83	6
6.	अगदतंत्र विषयक ।	22-3-83	6
7.	प्रसूति तंत्र एवं स्त्रीवाल रोग विज्ञान विषयक ।	22-3-82	6
8.	काय चिकित्सा विषयक ।	2-4-83	6
9.	स्वस्थवृत्त विषयक ।	22-3-83	6
10.	शालाक्य तंत्र विषयक ।	23-3-83	6
11.	शल्य तंत्र विषयक ।	23-3-83	6

आयुर्वेद अध्ययन मंडल ने निश्चय किया कि यह सुविधा केवल संबंध महाविद्यालयों के अध्यापकों को ही देय होगी । चिकित्सा क्षेत्र के व्यक्तियों को नहीं ।

10. आयुर्वेद संकाय की निश्चय संख्या 16 (4) दिनांक 11/12 जनवरी, 1983 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव सं. "4" आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे । संबंधित नियम-43-एच एवं तथा 43-आई में तदनुसार उचित सशोधन किया जावे" पर आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों की निम्न विवरणानुसार सम्पन्न हुई बैठकों की संस्तुतियों पर विचार विमर्श किया :—

क्र.सं.	समिति का नाम.	दिनांक.	संस्तुति सं.
1.	मौलिक सिद्धांत संस्कृत एवं इतिहास विषयक ।	21-3-83	7
2.	शरीर रचना विषयक ।	21-3-83	7
3.	शरीर क्रिया विषयक ।	21-3-83	7
4.	रोग विज्ञान एवं विकृति विज्ञान ।	23/24-3-83	7
5.	रसशास्त्र एवं भैषज्य कल्पना ।	10/11-4-83	7
6.	अगद तंत्र विषयक ।	22-3-83	7
7.	प्रसूतितंत्र एवं स्त्रीवालरोग विज्ञान ।	22-3-83	7

8. काय चिकित्सा विषयक ।	2-4-83	7
9. स्वस्थवृत्त विषयक ।	22-3-83	7
10. शालाक्य तंत्र विषयक ।	23-3-83	7
11. शल्य तंत्र विषयक ।	23-3-83	7

अध्ययन मंडल ने निर्णय लिया कि प्रथम खण्ड (वाचस्पति) के ग्रंथों का निर्धारण किया जाना उचित है। तथा द्वितीय खण्ड में केवल उत्तीर्ण का उल्लेख होना चाहिए।

11. आयुर्वेद अध्ययन मंडल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर, 1981 के संदर्भ में वैद्य वेद प्रकाश शर्मा के प्रस्ताव "आयुर्वेद संकाय द्वारा क्लीनिकल एवं नान-क्लिनिक विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु संबंध महाविद्यालयों को निर्देश दिये जावें" पर आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों की निम्न विवरणानुसार सम्पन्न हुई बैठकों की संस्तुतियों पर विचार विमर्श किया :—

क्र.सं.	समिति का नाम.	दिनांक.	संस्तुति सं.
1.	मौलिक सिद्धांत संस्कृत एवं इतिहास विषयक ।	21-3-83	8
2.	शरीर रचना विषयक ।	21-3-83	8
3.	शरीर क्रिया विषयक ।	21-3-83	8
4.	रोग विज्ञान एवं विकृति विज्ञान विषयक ।	23/24-3-83	8
5.	रसजास्त्र एवं भेषज्य कल्पना विषयक ।	10/11-4-83	8
6.	अगदतंत्र विषयक ।	23-3-83	8
7.	प्रसूति एवं स्त्रीवाल रोग विज्ञान विषयक ।	22-3-83	8
8.	काय चिकित्सा विषयक ।	2-4-83	8
9.	स्वस्थ वृत्त विषयक ।	22-3-83	8
10.	शालाक्यतंत्र विषयक ।	23-3-83	8
11.	शल्य तंत्र विषयक ।	23-3-83	8

सभी शिक्षण एवं अनुसंधान समितियों ने अपने अपने विषयों की क्लीनिकल स्वीकार किये जाने की संस्तुति की है अतः आयुर्वेद अध्ययन मंडल ने शिक्षण समितियों के अनुसार सभी विषयों को क्लीनिकल स्वीकार किये जाने की संस्तुति की है। तदद् संबंधी जानकारी भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली से ले लेनी आवश्यक है।

12. समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव संख्या

3 “राजस्थान विश्वविद्यालय द्वारा संबंध महाविद्यालयों के लिए निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुनःनिर्धारण तद्वत् विषयों की सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जावे” पर विचार विमर्श कर संसद की कि इन प्रस्ताव को संबंधित शिक्षण एवं अनुसंधान समितियों को विश्वविद्यालय द्वारा पूर्व में निर्धारित मापदण्ड की सूची के साथ विचारार्थ भेजी जावे ।

13. प्रभूति तंत्र स्त्री रोग कौमारमृत्यु विषयक अनुसंधान एवं शिक्षण समिति की निम्नवत् संख्या 11 के मंदर्म में विचार विमर्श कर कौमारमृत्यु विषयक को स्वतंत्र विभाग के रूप में प्रतिष्ठित किये जाने की संस्तुति की एवं एतद् संबंधी स्वीकृति श्री. सी. आई. एम से ले ली जावे ।

आयुर्वेद अध्ययन मंडल के सदस्य एवं अधिष्ठाता आयुर्वेद संकाय तथा श्री सतनामीशरण जी श्रीवास्तव के रचनारमक सहयोग के प्रति आभार प्रकट कर सभ्यवाद कार्यवाही सम्पन्न की गई ।

ह०/- (द्वैद्य शंकर त्रिवेदी)
संयोजक,

परिशिष्ट-I

(सन्दर्भः—ग्रन्थशान मण्डल की कार्यवाही विवरण की स. स. 4 (I))

दिनांक 21/3/83 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न मौलिक सिद्धान्त, संहिता संस्कृत विज्ञान एवं इतिहास विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति:

1. वैद्य धनश्याम शास्त्री (संयोजक)
2. वैद्य सेवक राम विरक्त
3. वैद्य पुरुषोत्तम शर्मा
4. वैद्य नरेन्द्र नाथ शास्त्री

(1) राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिनियम संख्या 42 एफ (4) के प्रावधान के अन्तर्गत आयुर्वेद शिक्षण, एवं अनुसंधान समिति के संयोजनार्थ 3 वर्ष की कालावधि के लिये सर्व सम्मति से संयोजक पद पर धनश्याम शास्त्री की नियुक्ति की गयी ।

(2) आयुर्वेद संकायान्तर्गत निम्नांकित परीक्षाओं के लिये निर्दिष्ट सिद्धान्तः संहिता संस्कृत, विज्ञान एवं इतिहास विषय के पाठ्यक्रम तथा पाठ्यपुस्तकें पाठ्ययोजना, परीक्षा योजना का निर्धारण करने की मण्डल की निम्नलिखित संस्तुति की गयी ।

प्री. आयुर्वेद परीक्षा, 1985 :

(1) संस्कृत

प्रथम पत्रम् (क) पद्य साहित्य (यथावत) 1981 में मुद्रित

(ख) पद्य साहित्य (यथावत) पाठ्यक्रमानुसार:

द्वितीय पत्र व्याकरण :

यथावत 1981 में मुद्रित पाठ्यक्रमानुसार:

तृतीय पत्रम् :

यथावत 1981 में मुद्रित पाठ्यक्रमानुसार

प्रायोगिक/भौतिक पत्रम्—यथावत् :—

सन् 1981 में मुद्रित पाठ्यक्रमानुसार

2. प्रारम्भिक पदार्थ विज्ञानम्

प्रथम पत्रम्—यथावत् 1981 में मुद्रित पाठ्यक्रमानुसार ही स्वीकार्य है ।

द्वितीय पत्रम्—यथावत् (1981 में मद्रित पाठ्यक्रम के अनुसार)

3. उद्भिज्जाग प्रत्यांग विज्ञान (पार्ट I)

प्रथम पत्र—यथावत् (1981 के पाठ्यक्रमानुसार)

प्रायोगिक पत्र में यथावत् 1981 के पाठ्यक्रमानुसार

4. प्रारम्भिक रसशास्त्र परिचय

प्रथम पत्र—यथावत् 1981 के पाठ्यक्रमानुसार

5. आयुर्वेदतिहासः आयुर्वेदपरिचयश्च

प्रथम पत्रम्—यथावत् 1981 के पाठ्यक्रमानुसार

(2) आयुर्वेदाचार्य (वंचलर आफ आयुर्वेदीय मैडिसिन एण्ड, सर्जरी)

परीक्षा :—

(क) प्रथम आयुर्वेदाचार्य परीक्षा, 1985

(अ) पदार्थ विज्ञान प्रथम पत्र—यथावत् 1981 के पाठ्यक्रमानुसार

(आ) पदार्थ विज्ञान मौखिक परीक्षा-यथावत् 1981 के पाठ्य-
क्रमानुसार

(इ) अष्टांग संग्रहः सूत्र स्थानम्-यथावत्

अष्टांग संग्रह के पत्र में अष्टांग संग्रह सूत्र के स्थान पर अष्टांग हृदय सूत्र स्थान पद्य तथा कोमल कान्त पदावली होने के कारण निर्धारित किया जावे तो अतिसमोचीन होगा ।

दिनांक 23/11/81 के शिक्षण एवं अनुसंधान समिति के उपवेशन में स्तुति की गयी थी कि अष्टांग संग्रह सूत्र स्थान अथवा अष्टांग हृदय सूत्र स्थान के विषय की प्रायोगिक/मौखिक परीक्षा होना आवश्यक है । अतः पृथक से 50 अंक का प्रायोगिक/मौखिक पत्र निर्धारित होना चाहिये । इसको पुनः आज समिति स्वीकृत करती है ।

(द) चतुर्थ वर्ष आयुर्वेदाचार्य परीक्षा, 1988

विषय—चरक संहिता पूर्वार्द्ध-यथावत् ।

(इ) पंचम वर्ष आयुर्वेदाचार्य परीक्षा, 1989

विषय—चरक संहिता उत्तरार्द्ध-यथावत्

इन उक्त दोनों चतुर्थ, पंचम वर्षों में चरक संहिता के विषयों के प्रायोगिक/मौखिक परीक्षा के लिये प्रश्न पत्र 50-50 अंक के निर्धारित होने चाहिये ।

ये संहिता ग्रन्थ केवल सैद्धान्तिक रूप से ही अभ्यासित न किये जाकर प्रयोगात्मक विषय बनाने के लिये प्रायोगिक/भौतिक परीक्षा व्यवस्था करवाना नितान्त अपेक्षित है।

3. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) परीक्षा :—

(अ) खण्ड प्रथम (प्रारम्भिक) परीक्षा, 1985

“आयुर्वेदेतिहास अनुसंधान पद्धति तथा सांख्यिकी”

विषयक प्रथम पत्रम्—यथावत

(ब) खण्ड 11 द्वितीय (उत्तरार्द्ध) परीक्षा, 1986

1. प्रथम पत्रम्—चरक संहिता—यथावत

2. द्वितीय पत्रम्—सुश्रुतसंहिता—यथावत

3. तृतीय पत्रम्—अष्टांगसंग्रह—यथावत

4. चतुर्थ पत्रम्—आयुर्वेदेतिहास—यथावत

(3) आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इण्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिये चिकित्सालयों, रसायन शालाओं तथा अन्य विभागों, को मान्यता प्रदान करने के लिये माप दण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प. रा. आयुर्वेद महाविद्यालय सीकर के पत्र संख्या 1937/80-81 दिनांक 12/10/81 पर विचार विमर्श कर निर्णय किया गया कि जहाँ पर स्नातक स्तर का अध्ययन, अध्यापन नियमानुसार सम्पन्न होता हो उन महाविद्यालयों में इण्टर्नशिप, सम्पन्न होनी चाहिये।

(4) आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष छात्र संघ एवं महानिबन्ध, छात्र संघ राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित प्रस्ताव संख्या 1 व 6 पर निम्नांकित विचार विमर्श किया गया :—

समिति के मतानुसार पी. ए. टी. प्राक् आयुर्वेद परीक्षण अवश्य होना चाहिये, जिससे कि योग्य छात्र मिल सके। परीक्षा विश्वविद्यालय के तत्वावधान में ही होना चाहिये। पी. ए. टी. की प्रवेश योग्यता शास्त्री प्रथम वर्ष अथवा तत्सम् परीक्षा होनी चाहिये और श्री. आयुर्वेद परीक्षा मनाप्त होनी चाहिये।

प्रस्ताव संख्या 6 के विषय में निश्चय है कि परीक्षा प्रश्न पत्र संस्कृत में ही निमित्त होने चाहिये ।

(5) आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री श्रीकृष्ण शर्मा, जयपुर के निम्नलिखित प्रस्ताव संख्या तीन पर विचार विमर्श किया ।

“स्नातकोत्तर वृक्षाश्रों में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो”—

समिति ने संस्तुति की कि जब तक प्री-आयुर्वेद का पाठ्यक्रम चले तब तक प्री-आयुर्वेद परीक्षोत्तीर्ण छात्रों को ही जो कि आयुर्वेदाचार्य परीक्षोत्तीर्ण हैं, स्नातकोत्तर में प्रवेश दिया जावे ।

(6) आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री पूर्णमल मिश्र, सादूलपुर के निम्नांकित प्रस्ताव पर विचार विमर्श किया :—

“जिस प्रकार मैडिकल संकाय में एम. डी. या एम. एस. में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाउस जोब से मुक्त रखते हुये प्रवेश देकर 2 वर्ष बाद एम. डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये ।”

समिति ने संस्तुति की कि केवल अध्यापन अनुभव रखने वाले वैद्यों को ही आयुर्वेद के वाचस्पति प्रथम वर्ष परीक्षा से मुक्त रखा जावे चिकित्सकों को नहीं । चिकित्सकों का अध्यापकों के समान शास्त्र स्वाध्याय नहीं होता ।

(7) समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री वेद प्रकाश शर्मा, जयपुर के निम्नलिखित प्रस्ताव संख्या 4 पर विचार विमर्श किया ।

“आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिसराम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे/सम्बन्धित नियम 43-एच तथा 43-आई में तदनुसार उचित संशोधन किया जावे ।”

समिति ने संस्तुति की कि श्री शर्मा जी का प्रस्ताव श्लाघनीय एवं समुचित है, समिति हृदय से इसका अनुमोदन करती है ।

(8) आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के दूसरा आयुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर, 82 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव “अयुर्वेद संकाय द्वारा क्लीनिकल एवं नान क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बद्ध महाविद्यालयों को निर्देश दिये जावें” पर विचार विमर्श कर समिति ने अपने विषय पर सहेतुक निम्नांकित निर्णय लिया :—

संहिता तथा मौलिक सिद्धांत विभाग को क्लीनिकल माना जावे । इस व्यवस्था से संहिता निर्दिष्ट सिद्धांत एवं उपद्रवों का व्यापक प्रचार प्रसार होगा तथा छात्रों पर आयुर्वेद के नुदृढ़तम संस्कार प्रभावशील होंगे । अतः संहिता मौलिक सिद्धान्त विभाग को क्लीनिकल मानकर तदनुसार व्यवस्था करवाने के निर्देश दिये जावें या तो आयुर्वेद बाह्य का समुपवृंहण निरन्तर होता रहे ।

अन्त में समिति के सदस्यों द्वारा आसनासीन महोदय को समिति के कुशल संचालन हेतु धन्यवाद दिया गया तथा आसनासीन महोदय द्वारा समस्त सदस्यों को प्रदत्त धन्यवाद के साथ बैठक की कार्यवाही विसर्जित हुई ।

ह./-

(चं. धनग्याम नास्त्री)

संयोजक

(परिशिष्ट II)

(सन्दर्भ : अध्ययन मंडल की संस्तुति संख्या 4 (ii))

दिनांक 21 मार्च, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण जयपुर में सम्पन्न शरीर रचना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. श्री अमर नाथ शास्त्री (संयोजक)
2. श्री एम. पी. पाण्डेय
3. श्री जे. पी. सिंह
4. श्री जितेन्द्र कुमार भागव
5. श्री हरि प्रताप शर्मा

(1) समिति ने राजस्थान विश्वविद्यालय की हैडवुक पार्ट II के परिनियम संख्या 42 एफ 4 के प्रावधानान्तर्गत समिति के संयोजक पद पर श्री अमर नाथ शास्त्री, म० मो० भा० राज० आयुर्वेद महाविद्यालय, उदयपुर को आगामी तीन वर्ष के लिए समिति का संयोजक नियुक्त किया ।

(2) समिति ने आयुर्वेद संकायान्तर्गत निम्नांकित परीक्षाओं के लिए निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल की संस्तुति की (अनुलग्नक-1)

(1) द्वितीय वर्ष आयुर्वेदाचार्य (डी०ए०एम०एस०) परीक्षा, 1986

(2) प्रथम खण्ड (प्रारम्भिक) आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद) परीक्षा दिसम्बर, 1983/जून, 1984

(3) समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, रसायन शालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प०रा० आयुर्वेद महाविद्यालय सीकर के पत्र संख्या 1637/80-81 दिनांक 12/10/81 पर विचार विमर्श कर संस्तुति की कि पंचम वर्ष

आयुर्वेदाचार्य की परीक्षा आयुर्वेद के छात्र उत्तीर्ण जिस महाविद्यालय से करते हैं उन सभी महाविद्यालयों में इन्टर्नशिप का केन्द्र स्वीकृत किए जाने की संस्तुति कर आयुर्वेद महाविद्यालय सीकर को इन्टर्नशिप केन्द्र के रूप में स्वीकृति प्रदान करते हैं ।

(4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महासचिव, छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित प्रस्ताव संख्या 1 व 6 पर विचार विमर्श कर संस्तुति की कि प्रस्ताव संख्या (i) इसे भारतीय चिकित्सा केन्द्रीय परिषद को विचारार्थ भेजा जावे । (ii) प्रश्न पत्र सरल संस्कृत में आते हैं इसलिए इनके हिन्दी अनुवाद की कोई आवश्यकता नहीं है ।

(5) आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री कृष्ण शर्मा, जयपुर के निम्नलिखित प्रस्ताव संख्या तीन पर विचार विमर्श किया ।

“स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो ।”

समिति ने संस्तुति की कि इसे उचित नहीं मानकर अस्वीकृत किया जाय ।

(6) आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11 जनवरी, 83 के संदर्भ से श्री पूर्णमल मिश्र, सादूलपुर के निम्नांकित प्रस्ताव पर विचार विमर्श किया :—

“जिस प्रकार मैट्रिकल संकाय में एम०डी० या एम०एस में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाऊस जोब से मुक्त रखते हुये प्रवेश देकर 2 वर्ष बाद एम०डी० (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये ।”

समिति ने संस्तुति की कि आयुर्वेद वाचस्पति पार्ट 1 में हाऊस जोब के साथ सामान्य विषयों की परीक्षा भी होती है अतः 5 वर्ष के चिकित्सानुभव

वाले चिकित्सकों को प्रथम वर्ष के अध्ययन से मुक्त किया जाना उचित नहीं है। अतः उनके प्रस्ताव को अस्वीकृत किया गया।

(7) समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11 जनवरी, 83 के संदर्भ में श्री वेद प्रकाश शर्मा, जयपुर के निम्नलिखित प्रस्ताव संख्या 4 पर विचार विमर्श किया।

आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे/सम्बन्धित नियम 43-एच तथा 43-आई में तदनुसार उचित संशोधन किया जाये।

समिति ने संस्तुति की कि उक्त प्रस्ताव स्वीकार नहीं किया जावे।

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11(च) दिनांक 22/23 सितम्बर, 82 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव “आयुर्वेद संकाय द्वारा क्लीनिकल एवं नान क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बद्ध महाविद्यालयों को निर्देश दिये जावे” पर विचार विमर्श कर संस्तुति की कि शरीर रचना विषय को क्लिनिकल स्वीकार किया जावे।

(9) समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित निम्न मांग पत्रों पर विचार विमर्श किया।

(2) पाठ्यक्रम की सीमा निर्धारित की जावे तथा जो विषय संक्षिप्त में दिये हैं तथा जिनकी कोई भी आखिरी सीमा नहीं है, उन्हें पाठ्यक्रम में खुलाना करके लिखा जावे।

(3) प्रश्न पत्र तथा पाठ्यक्रम दोनों को ही दो खण्डों में क्रमशः खण्ड ‘क’ व खण्ड ‘ख’ में बांटा जावे।

(5) प्रायोगिक का पाठ्यक्रम निर्धारित किया जावे।

समिति ने संस्तुति की कि उक्त मांग संख्या (2) एवं (5) के लिए इस

समिति की संस्तुति संख्या 2 के परिशिष्ट 1 (2) का अवलोकन किया जाय
मांग संख्या (3) पर पूर्व में निर्णय लिया जा चुका है ।

समिति की बैठक सघन्यवाद के साथ विनजित की गई ।

ह०/-

वैद्य अमर नाथ शर्मा

संयोजक

अनुलग्नक 1

(संदर्भ : समिति की संस्तुति संख्या-2)

1. द्वितीय आयुर्वेदाचार्य (बी०ए०एम०एस०) परीक्षा, 1986

समिति ने संस्तुति की कि शरीर रचना विषयक पाठ्यक्रम के जेयांशों एवं पाठ्य योजना एवं परीक्षा योजना को यथावत स्वीकार किया जाय एवं शृद्ध मुद्रण हेतु प्रूफ आदि के संशोधन हेतु स्थानीय सदस्य श्री जितेन्द्रकुमार भार्गव, प्राध्यापक राष्ट्रीय आयुर्वेद संस्थान, जयपुर को अधिकृत किया गया ।

2. प्रथम खण्ड आयुर्वेद वाचस्पति (एस. डी. आयुर्वेद) परीक्षा दिसम्बर, 83, जून, 1984 यथावत

“आयुर्वेद वाचस्पति पार्ट 1 के शरीर विषयक जेयांश केवल निर्देश मात्र है अतः इन जेयांशों में उल्लिखित एवं अनुल्लिखित दोनों संदर्भ पृष्ठे जा सकते हैं । इन्हीं के अनुसार प्रायोगिक परीक्षायें भी सम्पन्न की जानी चाहिये ।”

उक्त सूचना प्रश्न पत्र के जेयांशों के पूर्व निर्दिष्ट कर दी जावे ।

परिशिष्ट III

संदर्भ—अध्ययन मंडल की संस्तुति संख्या 4 (iii)

दिनांक 21 मार्च, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न हुई शरीर क्रिया विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही दिवरण :—

उपस्थिति

1. श्री मोहन लाल भारद्वाज (संयोजक)
2. श्री महेश चन्द्र शर्मा
3. श्री गिरीश चन्द्र उप्रेठी
4. डा. श्री के. के. पाण्डेय
5. डा. श्री सुदर्शन शास्त्री

1. राजस्थान विश्वविद्यालय हैण्डबुक पार्ट 2 के परिनिषम संख्या 24 एफ (4) के प्रावधानान्तर्गत शरीर क्रिया विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजनार्थ तीन वर्ष की कालावधि के लिये श्री मोहन लाल भारद्वाज, जयपुर को सर्व सम्मति से संयोजक मनोनित किया गया।

2. समिति ने आयुर्वेद संकायान्तर्गत निम्नांकित परीक्षाओं के लिए निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्यपुस्तकें, पाठ्य योजना एवं परीक्षा योजना को निर्धारित कर मण्डल की संस्तुति की :—

1. द्वितीय वर्ष आयुर्वेदाचार्य परीक्षा, 1986 (यथावत)

नोट :—समिति सर्वसम्मति से यह सिफारिश करती है कि इस समिति की बैठक 2 माह के अन्तराल के पश्चात् पुनः बुला ली जावे उस बीच सभी सदस्यों को विज्ञापन रूप से बाह्य सदस्यों को मुद्रित पाठ्यक्रम की प्रतियां प्रेषित कर दी जाये जिससे शरीर क्रिया विज्ञान पाठ्यक्रम में समुचित परिवर्तन/परिवर्धन हेतु संस्तुति की जा सके।

2. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) प्रथम खण्ड परीक्षा, 1985.

समिति ने संस्तुति की कि आयुर्वेद वाचस्पति एम. डी. आयुर्वेद प्रथम खण्ड परीक्षा 1985 के परीक्षा योजना पाठ्यक्रम के "प्रायोगिकम्" भाग में

शरीर क्रिया विज्ञान के प्रायोगिक निर्धारित नहीं है इसलिये शरीर क्रिया विज्ञान से सम्बन्धित प्रायोगिक अंश पाठ्यक्रम में निर्धारित किये जावे।

3. आयुर्वेद वाचस्पति (एन. डी. आयुर्वेद) द्वितीय खण्ड परीक्षा, 1986-दयावत

3. समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, स्नायन जालानों तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प. रा. आयुर्वेद महाविद्यालय, सीकर के पत्र संख्या 1637/80-81 पर विचार विमर्श किया।

समिति ने संस्तुति की कि आयुर्वेद कालेज सीकर में उपलब्ध शय्याओं के आधार पर वहाँ के विद्यार्थियों को वहाँ पर इन्टर्नशिप की सुविधा दे दी जावे।

4. समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महासचिव छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित प्रस्ताव संख्या 1 व 6 पर विचार विमर्श किया।

समिति ने संस्तुति की कि प्रस्तावित पत्र के प्रस्ताव संख्या 1 के सम्बन्ध में विचार करने के पश्चात्-समिति यह सिफारिश करती है कि प्रवेश योग्यता जो पूर्व में राजस्थान विश्वविद्यालय में आयुर्वेद प्रवेशिका में प्रवेश हेतु निर्धारित कर रखी है उसको यथावत् रखा जावे, फिलहाल ओब्जेक्टिव टाइप टेस्ट आदि का कोई औचित्य नहीं है। इसी प्रकार इस पत्र में प्रस्ताव व, स, द, य एवं र से यह समिति सहमत नहीं है, किन्तु इस पत्र के प्रस्ताव 6 के सम्बन्ध में समिति के सदस्यों की यह स्पष्ट राय है कि परीक्षाओं में आने वाले प्रश्नों का संस्कृत के साथ हिन्दी रूपान्तर भी छात्रों को उपलब्ध कराया जाये।

5. समिति ने आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री कृष्ण शर्मा, जयपुर के प्रस्ताव संख्या तीन "स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो।" पर विचार विमर्श किया।

समिति ने संस्तुति की कि स्नातकोत्तर कक्षाओं में प्रवेश के लिये प्री-आयुर्वेद उत्तीर्ण की अनिवार्यता अव्यावहारिक है अतः इसका कोई औचित्य नहीं है।

6. समिति ने आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री पूर्णमल मिश्र, सादूलपुर के निम्नांकित प्रस्ताव पर विचार विमर्श किया ।

“जिस प्रकार मेडिकल संकाय में एम. डी. या एम. एस. में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाऊस जोब से मुक्त रखते खाते हुये प्रवेश देकर 2 वर्ष बाद एम. डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये ।”

समिति ने संस्तुति की कि आयुर्वेद संकाय में पांच वर्ष के चिकित्सा अनुभव वाले शिक्षक के अतिरिक्त किसी अन्य व्यक्ति के दो वर्ष में आयुर्वेद वाचस्पति की परीक्षा देने का अधिकार दिया जाना उचित नहीं है ।

7. समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश स्वामी के प्रस्ताव संख्या 4 “आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे । सम्बन्धित नियम 43-एच तथा 43-आई ये तदनुसार उचित संशोधन किया जावे” पर विचार विमर्श किया ।

समिति ने संस्तुति की कि राजस्थान विश्वविद्यालय के सम्बन्धित नियम 43 (एच) तथा 43 (आई) में तदनुसार उचित संशोधन करके प्राप्तांकों के स्थान पर उत्तीर्ण अथवा अनुत्तीर्ण का उल्लेख मात्र किया जावे ।

8. समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6, दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर, 1981 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव आयुर्वेद संकाय द्वारा क्लीनिकल एवं नोन क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बन्ध महाविद्यालयों को निर्देश दिये जावे” पर विचार विमर्श किया ।

समिति ने संस्तुति की कि शरीर दिया विज्ञान विभाग तय इससे सम्बन्धित शिक्षक क्लीनिकल श्रेणी में रखी जावे ।

9. समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च 82 के द्वारा आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) राष्ट्रीय

आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा मांगपत्र में वर्णित मांग संख्या 2, 3 एवं 5 पर विचार विमर्श किया ।

मांग संख्या 2 :—पाठ्यक्रम की सीमा निर्धारित की जाये तथा जो विषय संक्षिप्त में दिये हैं तथा जिनकी कोई भी आखिरी सीमा नहीं है । उन्हें पाठ्यक्रम में खुलासा करके लिखा जावे ।

मांग संख्या 3 :—प्रश्न पत्र तथा पाठ्यक्रम दोनों को ही दो खण्डों में क्रमशः खण्ड 'क' एवं 'ख' में बांटा जावे ।

मांग संख्या 5 :—प्रायोगिक का पाठ्यक्रम निर्धारित किया जावे ।

उक्त प्रस्ताव समिति से सम्बन्धित नहीं हैं क्योंकि शरीर क्रिया विज्ञान में आयुर्वेद वाचस्पति (एम. डी.) आरम्भ नहीं हुआ है इसलिए उस पर कोई विचार विमर्श नहीं किया गया ।

संयोजक को दैन्यवाद के पश्चात् समिति की कार्यवाही सम्पूर्ण हुई ।

ह०/
(मोहन लाल भारद्वाज)

(परिशिष्ट IV)

(संदर्भ-अध्ययन मण्डल की संस्तुती नं० 4 (iv)

दिनांक 10/11 अप्रैल 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्मन रसशास्त्र एवं भैषज्य कल्पना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :—

उपस्थिति :

- 1— वैद्य लक्ष्मीनारायण शर्मा (संयोजक)
- 2— वैद्य मदन लाल शर्मा
- 3— वैद्य ब्रजमोहन सोनी
- 4— वैद्य हरि शंकर शर्मा

(वैद्य ब्रजमोहन सोनी 11 अप्रैल, 1983 को अनुपस्थित रहे)

(1) राजस्थान विश्वविद्यालय की हैण्डबुक भाग II के परिनियम संख्या 42 एक(4) के निम्नलिखित प्रावधानान्तर्गत आयुर्वेद शिक्षण एवं अनुसंधान रसशास्त्र एवं भैषज्य कल्पना विषयक समिति के संयोजक पद के लिये वैद्य श्री लक्ष्मी नारायण शर्मा, एसोसियेट प्रोफेसर एवं विभागाध्यक्ष-रसशास्त्र तथा भैषज्य कल्पना, राष्ट्रीय आयुर्वेद संस्थान, जयपुर को सर्व सम्मती से संयोजक चुना गया।

(2) समिति ने संकायान्तर्गत निम्नांकित परीक्षाओं के लिए निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों, पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की निम्नलिखितानुसार संस्तुति की :—

- (1) प्री- आयुर्वेद, 1985
- (2) तृतीय वर्ष आयुर्वेदाचार्य (वैचलर ऑफ आयुर्वेदिक मॅटिमेन एण्ड सर्जरी) परीक्षा, 1987
- (3) आयुर्वेद वाचस्पति प्रथम खण्ड परीक्षा, 1985
आयुर्वेद वाचस्पति द्वितीय खण्ड परीक्षा, 1986
- (I) प्री-आयुर्वेद परीक्षा सन् 1985 के संदर्भ में स्लेक्स के अन्तर्गत पेज नं० 27 व पेज नं० 28 पर (संस्करण 1981) :—

“(1) प्रायोगिक परीक्षा के अन्तर्गत तीन घण्टे का निहित प्रावधान हटाकर स्कीम आफ एग्जामिनेशन आर -43 डी में आइटम नम्बर थर्ड और जोड़ा जावे जिसमें इस प्रकार अंकित हो :-

Each Practical examination shall be Conducted with in six hours during a day consisting of 20 students maximum”

(अ) “सैन्द्रिय व निरेन्द्रिय द्रव्य” भेदों का वर्णन बतलाते हुये आपेक्षित रूप से ओरगेनिक एवं इनओरगेनिक द्रव्यों को आधुनिक विज्ञान की दृष्टि से लिया जाता है। आयुर्वेद की परिभाषा से भिन्न है। द्रव्य भेदों में सैन्द्रिय व निरेन्द्रिय से क्या तात्पर्य है। सी० सी० आई० एम० से स्पष्टीकरण कराया जावे। यह प्रश्न आज की समिति के सदस्य प्रो० श्री हरि शंकर जी शर्मा द्वारा प्रस्तुत किया गया।

(आ) रसायनिक परिवर्तन से क्या अभिप्राय है ? यह भी स्पष्ट किया जाय।

(इ) रत्नोपरलाना ~ — — — मैं गणना नाम के स्थान पर गणना होना चाहिये। अनुस्वार को हटाया जावे।

(उ) इसमें मानभेदाः तुलायन्त्रादिनाम, परिचय. के स्थान पर मानभेदाः तुलायन्त्रादिनाञ्च परिचयः किया जावे।

पेज 28 पर

1- घातुपघातवः के स्थान पर घातुपघातवः किया जावे।” “” बड़ा लिया जावे।

2- भ्राजिया के स्थान पर भ्राजिया होना चाहिये। अनुस्वार—हटाया जावे

3- इसके अतिरिक्त अन्य भी भाषा संबंधी त्रुटियों को दूर करने के लिये संयोजक से प्रूफ संशोधन के बाद ही प्रिन्टिंग करवाया जाना उचित है।

नोट :-

आपें ग्रन्थों में अज्जन के अन्तर्गत सर्वविध अंजनों का उपादान हो जाता है तो अज्जन के सामने एन्टीमनी (Antimony) का उल्लेख अनुचित है। तथा नीलाज्जन पृथक लिखा गया है इसको स्पष्ट किया जावे।

तृतीय वर्ष आयुर्वेदाचार्य परीक्षा, 1987 सितंबर के सम्बन्ध में

आयुर्वेदाचार्य तृतीय वर्ष के प्रथम प्रश्न पत्र रसगात्र नैदानिक पाठ्यक्रम 1980 को, 1987 के लिये पद्यादत मान्य किया जावे। चूकी रसगात्र

भैषज्य कल्पना करने आप में पूर्ण विषय है। अतः इसमें नैदानिक पत्रों का भाति प्रायोगिक परीक्षा के लिये भी 100 अंक की दो परीक्षाएँ स्वतंत्र रूप से ली जावें। अभी तक दोनों विषयों की एक पत्र के रूप में 150 अंक देकर परीक्षा ली जा रही है। वर्तमान पाठ्यक्रम में रसज्ञास्त्र एवं भैषज्य कल्पना के पृथक पृथक रूप से प्रायोगिक परीक्षा लेने का भी प्रावधान है। अतः विषय के गहन ज्ञान हेतु सी. सी. आई. एम. को लिखा जावे। तथा फैंकल्टी पृथक परीक्षा लेने की व्यवस्था करे।

आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) परीक्षा राण्ड (उत्तरार्ध) परीक्षा 1986 हेतु

- (1) आर्टिनेन्स 329 एन-26 ए के अन्तिम पंक्ति रजिस्ट्रेशन के आगे "आफ थीसिस" शब्द जोड़ा जावे। 1 सी के सातवे लाइन (बी) के बाद की लाइन काट दी जावे व ऊपर दूसरी लाइन में 'एक्सपीरियन्स' के बाद इन दो सबजेक्ट कर्गन" लिखा जावे।
- (2) पेज नं. 8 पर ही 18 वी लाइन के 'एग्जामिनेशन' शब्द के बाद "आफ फर्स्ट एण्ड फाइनल एग्जामिनेशन" जोड़ा जावे।
- (3) पेज नं. 5, की 15 वी लाइन के अन्त में 'स्टेडी टूर' और जोड़ा जावे।
- (4) मेडिकल फैंकल्टी की भाति एम. डी. में सप्लीमेन्ट्री की व्यवस्था की जावे।
- (5) आयुर्वेद वाचस्पति प्रथम वर्ष के तृतीय पत्र में निर्धारित रस भैषज्य कल्पना से संबंधित नैदानिक व प्रायोगिक विषय यथावत रखने का अनुमोदन किया गया।
- (6) आयुर्वेद वाचस्पति - उत्तरार्द्ध के चारों पत्र यथावत रखे जावे व श्रेयांशों में परिवर्तन मूलक परिष्कारार्थ सी. सी. आई. एम. को लिखा जावे इस संदर्भ में 1976 को लिखा जा चुका है। इसे रिमाइन्ड किया जावे चतुर्थ पत्र में औषधियों का नाम उल्लेख (कल्पनानुसार) आवश्यक है

मध्यावधि के लिये सन् 1976 में प्रेषित सुझावों उद्धृत श्रेयांशों को परिभाषितकर सभी कल्पनाओं को समाहित करते हुए निर्धारित 1977 के नलेक्स में पृष्ठ 33 से 46 तक पी. जी. के विभागाध्यक्ष बैठकर मंजुरि करके बोर्ड आफ स्टडीज के सामने प्रस्तुत करें।

- (7) पेज नं. 28 के पक्ति संख्या 24 में नाम रूप के साथ प्रभाव शब्द जोड़ा जावे। पेज नं. 30 की 9 वी लाइन के बाद जेयांश में निम्न निर्दिष्ट वाक्य जोड़ा जावे।

प्रथम प्रश्न पत्र निर्दिष्ट औसत प्रभाव परिचयार्थ द्वितीय पत्र में निहित रसोपधि जोषपूर्व्ये तृतीय पत्रांकित सर्वोर्धता ज्ञानार्थ चतुर्थ पत्र अंकित सयुक्तिक प्रयोग ज्ञानार्थ आरोग्यशालीय प्रायोगिक पंजिका प्रस्तुतिकरणम् आवाश्यकम्।

- (3) समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयो रसायन शालाग्रों तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प. रा. आयुर्वेद महाविद्यालय सीकर के पत्र संख्या 1637/80-81 दिनांक 12/10/81 पर विचार विमर्श किया।

समिति ने संस्तुति की कि निरिक्षण बोर्ड द्वारा जांच की संस्तुति के अनुसार स्वीकृति दी जावे

- (4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11/12 जनवरी 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष छात्र मंडल एवं महासचिव छात्र संघ राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लेखित प्रस्ताव संख्या 1 व 6 पर विचार विमर्श किया।

समिति ने संस्तुति की कि प्रस्ताव 1 व 6 के संदर्भ में समिति चालु क्रम को ही मान्य करती है, जो सी. सी. आई. एम. के द्वारा भी समर्थित है।

11 + 1 को लागू रखा जावे, योग्यता भारतीय स्तर की हो यही क्रम अधिकांश विश्वविद्यालय में संचालित है

आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी 1983 के संदर्भ में कमेटी का नुस्खा है कि सरल नुरत नुदास्य शुद्ध संस्कृत में पत्र बनाये जावे व अंग्रेजी आदि भाषा के परिभाषिक शब्द कोष्ठकी में यथावत अंकित किये जावे।

निर्णयानुसार आयुर्वेद वाचस्पति एवं विद्यावारिधि के शीर्षक ननो-प्लिस अनुमति हेतु संबंधित रिजर्व कमेटी को भेजा जाना आवश्यक है

- (5) समिति ने आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11/12 जनवरी 1983 के संदर्भ में श्री श्रीकृष्ण शर्मा जयपुर के प्रस्ताव स्नातकोत्तर

कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-ग्रायुर्वेद पास व्यक्ति ही पात्र हो पर विचार विमर्श किया

समिति ने पूर्व स्थिति की ही संस्तुति की है

(6) समिति ने ग्रायुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11/12 जनवरी 83 के संदर्भ में श्री पूर्णमल मिश्र, के प्रस्ताव ' जिस प्रकार मेडिकल संकाय में एम. डी. या एम. एस्. में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार ग्रायुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाउस जोब से मुक्त रखते हुए प्रवेश देकर 2 वर्ष बाद एम. डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये ' पर विचार विमर्श किया

समिति ने संस्तुति की कि मेडिकल फैकल्टी की भांति यहां भी व्यवस्था की जाय तथा प्रथम वर्ष के समस्त पत्रों की परीक्षा अवश्य ली जावे ।

(7) समिति ने ग्रायुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री वेद प्रकाश जर्मा के प्रस्ताव संख्या 4 "कि ग्रायुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे । सम्बन्धित नियम 43-एच तथा 43-आई में तदनुसार उचित संशोधन किया जावे" पर विचार विमर्श किया ।

समिति ने संस्तुति की कि इसे यथावत् रखा जावे ।

(8) समिति ने ग्रायुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के द्वारा ग्रायुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर, 1981 के द्वारा श्री वेद प्रकाश जर्मा के प्रस्ताव "ग्रायुर्वेद संकाय द्वारा क्लीनिकल एवं नॉन क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बन्ध महाविद्यालयों को निर्देश दिये जावे" पर विचार विमर्श किया ।

समिति ने संस्तुति की कि ग्रायुर्वेद के 12 ही विभागों को क्लिनिकल माना जावे । इस संदर्भ में इन भैषज्य कल्पना विभाग को शोध एवं प्रयोग प्रभाव ज्ञान के पक्ष को ध्यान में रखते हुए क्लीनिकल मानने के पक्ष में संस्तुति करती है । अन्य विश्वविद्यालयों में इस विषय में यही मान्यता है ।

(9) आयुर्वेद मंत्रालय की निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव संख्या 3 “राजस्थान विश्वविद्यालय द्वारा सम्बन्ध आयुर्वेद महाविद्यालयों के लिए निर्धारित न्यूनतम आवश्यकताओं का मुनिश्चित रूप से पुर्ननिर्धारण तत्तद् विषयों की सभी अनु-संधान एवं शिक्षण समितियों द्वारा किया जाये” पर समिति ने विचार विमर्श किया ।

समिति ने संसुति की कि वर्तमान में न्यूनतम आवश्यकताओं की पूर्ति करवाना आवश्यक है । तदन्तर पुर्ननिर्धारण किया जाना चाहिये ।

(10) समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद वाचस्पति (एम० डी० आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित मांग संख्या 2, 3 एवं 5 पर विचार विमर्श किया ।

समिति ने संसुति की कि मांगों को उचित मानकर उनकी पूर्ति की जानी चाहिए ।

संयोजक द्वारा धन्यवाद के साथ सभा विघटित हुई ।

ह०/-

(वैद्य लक्ष्मीनारायण शर्मा)

परिशिष्ट V

संदर्भ : अध्ययन मण्डल की संस्तुति संख्या—4 (v)

दिनांक 23/24 मार्च, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न रोग विज्ञान एवं विकृति विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

उपस्थिति

1. वैद्य गोरी शंकर क्षोत्रीय (संयोजक)
2. वैद्य ग्रीश चन्द्र उप्रेती
3. वैद्य राधाकान्त शर्मा
4. वैद्य श्रीम प्रकाश शर्मा
5. वैद्य विनय कुमार शास्त्री

नोट :—दिनांक 24 मार्च, 83 को वैद्य विनय कुमार शास्त्री एवं वैद्य ग्रीश चन्द्र उप्रेती अनुपस्थित रहे ।

(1) समिति ने राजस्थान विश्वविद्यालय हैण्डबुक पार्ट II के परिनियम संख्या 42 एफ (4) के प्रावधानान्तर्गत आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजनार्थ 3 वर्ष की अवधि के लिए आयुर्वेद अध्ययन मण्डल के सदस्य श्री गोरी शंकर क्षोत्रीय, प्राध्यापक, म. मो. भा. राज. आयुर्वेद महाविद्यालय, उदयपुर को नियमानुसार संयोजक नियुक्त किया ।

(2) समिति ने आयुर्वेद संहयान्तर्गत आयुर्वेदाचार्य तृतीय वर्ष, परीक्षा आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) द्वितीय खण्ड (उत्तरार्द्ध) विषय के पाठ्यक्रम तथा पाठ्यपुस्तकें, पाठ्य योजना एवं परीक्षा योजना को निम्नांकित रूप में विचार कर संस्तुति की :—

(क) तृतीय वर्ष, आयुर्वेदाचार्य परीक्षा, 1987

रोग विज्ञान एवं विकृति विज्ञान को पाठ्यक्रम के प्रथम पत्र के खण्ड 'ख' अनुक्रमांक 8 की ओर जोड़ा जाय, जिसमें विभिन्न जीवाणु एवं प्रभियों का सामान्य परिचय सम्मिलित किया जाय तथा जीवाणु पथोलाजिक जीवाणु राजव्यमादण्डाणु आंत्रिक ज्वर दण्डानु, धनुवनि, रोहिणी, विमृचिका, कुष्ठ, प्रवाहिका जीवाणु, विषय ज्वर, कालज्वर, श्लोषद, अप्रकृमि, स्नायुक ।

द्वितीय पत्र खण्ड “क”—आयुर्वेदीय ज्वर प्रकाश के साथ :—

(अ) वसन्तक ज्वर, आंत्रिक ज्वर, विषम ज्वर, काल ज्वर, वातश्लै-
पियक ज्वर शीर्षांशुमिक ज्वर, दण्डक ज्वर ।

(ब) पाठ्यक्रम में हृदयावयव विकृति, यकृतविकृति, वृक्क विकृति, फुसफुस विकृति आदि का ज्ञान स्पष्ट रूप से नहीं लिया गया है, इसलिये इनको स्पष्ट करने के लिये निम्नलिखित हृद्रोत्रा, वृक्करोग यकृतरोग, फुसफुस रोगों का अध्ययन आवश्यक है । हृदयावरण शोध, हृदय कार्यनिपातः दृच्छूल, उच्च रक्तचाप, हृदय की कपाटीय एवं गत्यात्मक विकृतियों का सामान्य ज्ञान ।

वृक्करोग :—वृक्क शोध वृक्कशूल, वृपताशरीरी मूत्रविषयमता,

यकृतरोग :—यकृतशोध, यकृत्दात्युत्कर्ण यकृत्विर्दधि ।

फुसफुस रोग :—उरस्तीय, पूयोरस, वसनाभि स्तीर्णतो, वातो-
त्पुल्लिता ।

(ख) आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) परीक्षा खण्ड । (प्रार-
म्भिक परीक्षा) 1985 यथावत स्वीकार की जाती है ।

(ग) आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) खण्ड II (उत्तरार्द्ध) परीक्षा, 1986 के सम्बन्ध में श्री राधाकान्त शर्मा अध्यक्ष रोग विज्ञान विकृति विज्ञान, स्नातकोत्तर, राष्ट्रीय आयुर्वेद संस्थान, जयपुर द्वारा प्रस्तुत रोग विज्ञान स्नातकोत्तर पाठ्यक्रम को रोग विज्ञान एवं विकृति विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति यथावत स्वीकार करती है, और क्रियान्विति हेतु अनुरोध करती है । (अनुलग्नक 1)

(3) समिति ने आयुर्वेद संकाय की निश्चय संस्था 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, रसायन जालाश्री तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, रा. आयुर्वेद महाविद्यालय सीकर के पत्र पर विचार विमर्श कर संस्तुति की कि आयुर्वेद महाविद्यालय सीकर में स्नातकोत्तर अध्ययन वर्तमान में चालू नहीं है, अतः विचार करते समय “स्नातकोत्तर अध्ययन के लिये चिकित्सालय” शब्द को हटाया जाय । इसी क्रम में स्नातकोत्तर की इन्टर्नशिप के लिये यह शिक्षण एवं अनुसंधान समिति मुझाव देती है कि यह विषय

विश्वविद्यालय के अधिकार क्षेत्र का है फिर भी 'पंचम वर्ष' का पाठ्यक्रम वहाँ लागू है और उनकी प्रायोगिक कर्मन्वियम हेतु आवश्यक शैव्याओं की पूर्ति देखकर ही स्वीकृति होगी, ऐसी परिस्थिति में इन्टर्नशिप प्रारम्भ करने में कोई आपत्ति नहीं होनी चाहिये ।

(4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री अजोक कुमार शर्मा, अध्यक्ष छात्र संघ एवं महा-सचिव, छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित प्रस्ताव संख्या 1 एवं 6 पर विचार विमर्श किया ।

समिति ने संस्तुति की कि वर्तमान में जो प्रथम वर्ष में प्रवेश योग्यताएँ हैं वे यथावत रखी जाना उचित होगा । तथा प्रस्ताव संख्या 6 पर समिति ने सुझाव दिया कि प्रश्न पत्रों की भाषा अति सरल संस्कृत ही होनी चाहिये और प्रश्न निर्माताओं को भी इस विषय में स्पष्ट निर्देश देना चाहिये ।

(5) समिति ने आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री श्रीकृष्ण शर्मा के प्रस्ताव "स्नातकोत्तर कक्षाओं के लिये कम से कम एक वर्षीय ग्री-आयुर्वेद पास व्यक्ति ही पात्र हो" पर विचार विमर्श किया ।

समिति ने संस्तुति की कि समिति के निर्णयानुसार यह प्रस्ताव मान्य नहीं है ।

(6) समिति ने आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री पूर्णमल मिश्र, सादुलपुर के प्रस्ताव "जिन प्रकार मेडिकल संकाय में एम. डी. या एम. एस. में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाऊस जोब में मुक्त रखते हुये प्रवेश देकर 2 वर्ष बाद एम.डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये ।" पर विचार विमर्श किया ।

समिति ने संस्तुति की कि इस विषय में गहन विचार विमर्श करने के उपरान्त यह निर्णय लिया कि इस पर सम्पूर्ण विचार विमर्श करने हेतु एक समिति का गठन किया जावे ।

(7) समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव "आयुर्वेद स्नात-

कोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे। सम्बन्धित नियम 43-एच तथा 43 आई में तदनुसार उचित संशोधन किया जाये” पर विचार विमर्श किया।

समिति इस प्रस्ताव को सर्वथा स्वीकार करती है।

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर, 81 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव “आयुर्वेद संकाय द्वारा क्लीनिकल एवं नॉन क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बन्ध महाविद्यालयों को निर्देश दिये जावे” पर विचार विमर्श कर समिति अपने विषय की क्लीनिकल अथवा नॉन क्लीनिकल की पात्रता का स्पष्टतः निर्धारण करने हेतु विचार विमर्श किया।

समिति ने संस्तुति की कि रोग विज्ञान विषय का चिकित्सालय एवं प्रत्यक्ष रोगियों से निकट का सम्बन्ध है और स्नातक एवं स्नातकोत्तर के छात्र चिकित्सालय में रोग, रोगी परीक्षा, तदनुसार चिकित्सा उपशय का निर्देश करते हैं। अतः यह विषय क्लीनिकल सर्वसम्मति से मान्य किया जाता है।

(9) समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद वाचस्पति (एम डी. आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित मांग संख्या 2, 3 एवं 5 पर विचार विमर्श किया :—

मांग संख्या 2 :—पाठ्यक्रम की सीमा निर्धारित की जावे तथा जो विषय संक्षिप्त में दिये हैं तथा जिनकी कोई भी आखिरी सीमा नहीं है। उन्हें पाठ्यक्रम में खुलासा करके लिखा जावे।

मांग संख्या 3 :—अज्ञ पत्र तथा पाठ्यक्रम दोनों की ही दो खण्डों में क्रमशः खण्ड ‘क’ व खण्ड ‘ख’ में बांटा जाये।

मांग संख्या 5:- प्रयोगिक का पाठ्यक्रम निर्धारित किया जावे।

समिति ने गहन विचार विमर्श के दौरान यह संस्तुति की कि....

मांग संख्या 2 के संदर्भ में —

रोग विज्ञान विषय का पाठ्यक्रम मांग के अनुसार खुलाना है।

मांग संख्या 3 के संदर्भ में -

यह समिति इसका अनुमोदन करती है ।

मांग संख्या 5 के संदर्भ में -

इस विषय में भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली से जानकारी की जावे । प्रथम वर्ष प्रयोगिक परीक्षा में क्या आवश्यक है, उन्होंने निर्धारण किया है क्योंकि राजस्थान विश्वविद्यालय मैट्रिकल कौन्सिल के आदेशों का ही पूर्णतया समर्थन करता है ।

(10) समिति ने आयुर्वेद संकाय की निश्चय संख्या 16 दिनांक 11/12 जनवरी, 83 के संदर्भ में वेदप्रकाश शर्मा के प्रस्ताव संख्या 3 "राजस्थान विश्वविद्यालय द्वारा सम्बद्ध आयुर्वेद महाविद्यालय के लिए निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुनर्निर्धारण तत् विषयों की सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जावे " पर विचार विमर्श किया ।

समिति ने गहन विचार विमर्श करने के बाद निर्णय लिया कि राजस्थान विश्वविद्यालय में जो हैण्ड बुक (आवश्यक उपकरण एवं साधन सामग्री) की हैं वह सन् 1974 की हैं । विगत दस वर्षों में विज्ञान ने सभी क्षेत्रों में महान प्रगति की है अतः इसमें ग्रामूल नूल परिवर्तन अपेक्षित है ।

(11) भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली के निर्देशानुसार राजस्थान विश्वविद्यालय को पाठ्यक्रम आदि सभी बिन्दुओं को मान्यता देना नियमानुसार आवश्यक है अतः राजस्थान विश्वविद्यालय को उचित है कि भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली से विवरणिका प्राप्त की जावे जिसमें स्नातक एवं स्नातकोत्तर आयुर्वेद महाविद्यालयों के लिये सुनिश्चित आवश्यक उपकरण साधन सामग्री की सूची का सविस्तार उल्लेख किया गया हो ।

(iii) रोग विज्ञान एवं चिकित्सा विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति टेबिल आईटम पर उपरोक्त पूर्ति होने पर ही अपने विचार प्रस्तुत कर सकती है ।

(vi) प्रस्तावक वेदप्रकाश शर्मा ने न्यूनतम आवश्यकताओं का निर्धारण करने की मांग की है तो वे एक प्राथम आयुर्वेद संकाय के सामने प्रस्तुत करें । यदि संभव न हो तो उचित यह होगा कि इस कार्य हेतु 3 या 5

व्यक्तियों की एक समिति गठित की जाय जो भारतीय चिकित्सा केन्द्रीय परिषद् से सम्पर्क स्थापित कर अपने स्तर से भी विवरणिका का प्राप्त तैयार करें जिससे यह कार्य शीघ्र सम्पन्न हो सके ।

समिति की कार्यवाही संयोजक को धन्यवाद के साथ समाप्त हुई ।

ह०/-

(गोरी शंकर क्षोत्रिय)

संयोजक

अनलग्न 1

(संदर्भ : रोग विज्ञान अनुसंधान समिति की नि. सं. 2)

दोषदूष्यादि विज्ञानम्

दोषाणां क्षय वृद्धि प्रकोप हेतवः लक्षणानि च ।

धातु—उपधातु मलानां दूष्यत्वम्, एतेषां क्षय वृद्धि प्रदोषज हेतवः लक्षणानि च ।

दोषदूष्याणां आश्रयाश्रयी भावं सम्बन्धः ।

दोषदूष्यादीनां आश्रयापकर्ष, विलोमगती, विमार्गगमन, अनुवन्ध्यानुवन्ध्यं, प्राकृत वैकृत वैकृतगति, सप्रत्यनीक निष्प्रत्यनीकत्व ।

त्रयोरोग मार्गाः मार्गगतः रोगाः इन्द्रिय प्रदोषज विकाराः धातुप्रदोषजाः विकाराः उपधातुप्रदोषजाः विकाराः मलप्रदोषजाः विकाराः सामान्यज नानात्मज विकारा दोषाणां कोष्ठात् शाखादिगमनं शाखाम्य कोष्ठाभिगमनं ।

दोषणा पृथक्-संतृष्ट-सन्निपात भेदाः लीन स्तंभिताः दोषा तेषां विकृत-यश्च स्त्रोतों विज्ञानम् प्रकृति-विकृति ज्ञानयुभय ।

स्त्रोतोदुष्टि द्रुष्टिलक्षण, विद्वलक्षण हेतवःश्च, खवैगुण्य स्रोतसां रचना, क्रिया शरीर च ।

विशिष्ट सम्प्राप्ति विज्ञानम्

निदान पंचक

पङ्क्रिया काल

चयप्रकोपप्रशय

संख्याविकल्पादि सम्प्राप्ति विशिष्टा भेदाश्च ।

हेतुलक्षणयोः सम्प्राप्तिलक्षणयोः सम्बन्धश्च ।

चरकोवतानां च रोगाणां विशिष्ट सम्प्राप्ति निर्माण प्रक्रिया सामान्य प्रक्रिया च संप्राप्ते घटका

दोषदूष्य संमूर्च्छना

दोष दूष्याणां आन-साम निराम पच्यमानस्य अवस्था भेद विज्ञेयाः ।

(परिशिष्ट VI)

संदर्भ : अध्ययन मण्डल की संस्तुती संख्या 4(VI)

अगद तन्त्र विषयक

दिनांक 22/3/83 को मध्याह्न 12 बजे कुलपति सचिवालय विश्व-विद्यालय प्रांगण, जयपुर में सम्पन्न अगदतंत्र एवं व्यवहार आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :—

उपस्थिति :

1. श्री मुकुट विहारी शर्मा, (संयोजक)

2. श्री ब्रह्मेश्वर झा

3. श्री मुरारी लाल मिश्र

4. श्री रामप्रसाद शर्मा

श्री वाई. एस. धर्मा अनुपस्थिति रहे ।

(1) राजस्थान विश्वविद्यालय हैण्डबुक पार्ट II के परिनियम संख्या 42 एफ(4) के प्रावधानान्तर्गत आयुर्वेद शिक्षण एवं अनुसंधान समिति के संयोजनार्थ 3 वर्ष की अवधि के लिये आयुर्वेद अध्ययन मण्डल के सदस्य श्री मुकुट विहारी शर्मा, म. मो. मा. राजकीय आयुर्वेद महाविद्यालय, उदयपुर को नियमानुसार संयोजक नियुक्त किया ।

(2) समिति ने आयुर्वेद संकायान्तर्गत आयुर्वेदाचार्य (तृतीय वर्ष) के लिये अगदतंत्र व्यवहार आयुर्वेद विषय के पाठ्यपुस्तको, पाठ्य योजना एवं परीक्षा योजना को निम्नांकित रूप से विचार कर संस्तुति की :—

तृतीय वर्ष आयुर्वेदाचार्य परीक्षा, 1987

उक्त पाठ्यक्रम में निम्न प्रकार से संशोधन किया जावे :—

विश्वविद्यालय मूद्रित 1981 संस्करण के तृतीय वर्ष आयुर्वेदाचार्य पाठ्यक्रम के पृष्ठ संख्या 58, क्र. सं. 3 में विष परीक्षण (पांच भौतिकी एवं रासायनिक परीक्षा) का उल्लेख करना आवश्यक है क्योंकि प्रायोगिक पत्र के अंक निर्धारण में रासायनिक परीक्षण के अंक प्रयत्न हैं ।

पाठ्यक्रम पृष्ठ सं. 59 के संदर्भ में 5 में दिनांक 25 नवम्बर, 1981 की शैक्षणिक एवं अनुसंधान समिति की सर्वानुमति निर्णय की पृष्ठ संकाय ने नहीं की अतः पुनः सर्व समन्ति से प्रस्ताव रखा जाता है कि आयुर्वेद संकाय इन प्रस्ताव को मूलतः स्वीकार करें यदि किसी प्रकार की आपत्ती हो तो, भारतीय

चिकित्सा केन्द्रीय परिपद्, नई दिल्ली को लिखकर संशोधन करवाने की यह समिति संस्तुति करती है कि जयपाल के वाद 'घन्तूर बीज, इन्द्रायण अर्कः, अरण्डहः, लांगली, पारदः का उल्लेख करवाया जाये।

। पाठ्यक्रम की प्र. सं. 59 पर क्र. सं. 5 की पंचम पक्ती में "ज्ञाना-वश्यकम्" होना चाहिये। क्रमांक 7 में गंधकादि नाम के स्थान पर गंधकाम्न के पश्चात् निम्नांकित द्रव्यों के नाम उल्लेख करने चाहिये क्योंकि आदि शब्द से छात्र, अध्यापक एवं परीक्षक तीनों ही शान्त हो जाते हैं।

'शेरकाम्ल, लवणाम्ल, आक्जेलिकाम्ल कार्वोसिकाम्ल हाइयोशिमानी-काम्ल, वेलेडोना, डीजीटेलिस, अल्कोहल, क्लोरोफार्म, ईथर, कार्बन-ट्राईऑक्सा-इड, कार्बनमोनो आक्साइड, पोटैश, फास्फोरस, एक्सरे।

क्रम सं. 6 में आमाशयादि स्थिति दूषि विप स्थिते दूषि विषय शब्दों के पश्चात् निम्नलिखित विषयों का समावेश आवश्यक है क्योंकि वर्तमान समय में इन द्रव्यों का अधिक उपयोग होता है जिससे शरीर में अनेक दुष्परिणाम होते हैं, ऐसे रोगी औपचारिकों में आते हैं, जिनका निर्णय इन द्रव्यों के अवगुणों की जानने पर ही हो सकता है। 'एन्टीवायोटिक्स, एन्टीपायरेटिक, एन्टीएलर्जिक टेक्नीलाइजर्स' (आमाशयादि स्थिते दूषिविषय लक्षणानि एवं एन्टीवायोटिक्स, एन्टीपायरेटिक्स, एन्टीएलर्जिक, टेक्नीलाइजर्स जन्म हानिकर लक्षणानि चिकित्सा च)

पृ० सं. 59 क्र. सं 10 में विष-च के स्थान पर विषाख शब्द होना चाहिये पृ. सं. 60 व्यवहार आयुर्वेद क्र. सं 2 में (अधमंस्थ सर्वथा रोग कारकत्वात् धर्मपालनमावश्यकमेव) इस प्रकार मुद्रित होना चाहिये। पृ. सं. 60 क्र. सं. 5 वैद्यकस्थ के स्थान पर वैभस्थ होना चाहिये। पृ. सं. 60 क्र. सं. 7 'लिखती' शब्द के स्थान पर 'लिखित' शब्द होना चाहिये। पृ. सं. 60 में ही क्र. सं. 8 में तैमुक्ते के स्थान पर "तैमृते" होना चाहिये।

(3) समिति ने आयुर्वेद संकाय की निम्नचय मंत्र्या 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय मे इन्टर्नशिप तथा स्नान-कोस्तर अध्ययन के लिए चिकित्सालयों, रसायन शालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, पं. रा. आयुर्वेद महाविद्यालय, सीकर के पत्र पर विचार विमर्श कर संस्तुति की कि जिन विद्यालयों में 'पंचम वर्ष' तक अध्ययन एवं अध्यापन कराने की सुविधा एवं साधन, सामग्री उपलब्ध है उन विद्यालयों को विभिन्नानु प्रवेशार्थ स्वीकृति प्रदान की जावे।

(4) समिति ने संकाय की निश्चय संख्या 13 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महासचिव, छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित (अनुलग्नक 1 प्रस्ताव संख्या 1 व 6 पर विचार विमर्श कर निम्नलिखितानुसार संस्तुती की :—

प्रस्ताव संख्या 1 (अ, व) :—

“वर्तमान में जीव विज्ञान, रसायन विज्ञान आदि विज्ञान वर्ग में आते हैं जब कि मंस्कृत कला वर्ग का विषय है ऐसी परिस्थिति में एक छात्र दोनों वर्गों की योग्यता एक साथ नहीं रख पाते हैं अतः वर्तमान में जो पूर्व से चली आ रही योग्यता है वही उचित होगी ।

प्रस्ताव संख्या : 1 (स-द) :

संस्तुति की इस प्रकार प्री-आयुर्वेद का प्रवेश पी. एम. टी. की तरह परीक्षा त्रिविध द्वारा होना श्रेयस्कर होगा ।

प्रस्ताव संख्या : 1 (य) :

प्रवेशार्थ परीक्षा जयपुर में ही हो ।

प्रस्ताव संख्या : 1 (र) :

आयुर्वेद इतिहास एवं आयुर्वेद परिचय विषय का अध्ययन प्रथम वर्ष में रखा जावे । यह समिति अपनी संस्तुति प्रस्तुत करती है ।

प्रस्ताव संख्या : 6

प्रश्न पत्रों का निर्माण सरलत संस्कृत में ही किया जावे एवं परीक्षकों को निर्देश दिया जावे कि—तकनीकी शब्दों को यथावत रखते हुये सरल संस्कृत में ही प्रश्न पत्रों का निर्माण करें ।

(5) समिति के आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री श्रीकृष्ण शर्मा के प्रस्ताव “स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो ” पर विचार विमर्श कर संस्तुति की कि उक्त प्रस्ताव को समिति ने अस्वीकार करती है अर्थात् मान्य नहीं है ।

(6) समिति आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री पूर्णनंद मिश्र, सादुलपुर के प्रस्ताव ‘जिन प्रकार वैदिक संकाय में एम. डी. या एम. एस्. में प्रवेश लेने वाले 5 वर्ष के

चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है, उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाउस जॉब से मुक्त रखते हुए प्रवेश देकर 2 वर्ष बाद एम. डी. वाचस्पति फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये। पर विचार विमर्श कर निम्न प्रकार संशोधित किया, कि पंचमवर्षीय आयुर्वेदिक कोर्स अध्ययन करने वाले चिकित्सक को ही 5 वर्ष की चिकित्सानुभव के बाद प्रथम वर्ग से मुक्त रखते हुये 2 वर्ष में ही अन्तिम वर्ष (आयुर्वेद बृहस्पति) की परीक्षा देने की अनुमति दी जावे।

(7) आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11 जनवरी 83 के संदर्भ में श्री वेदप्रकाश शर्मा के प्रस्ताव संख्या 4 आयुर्वेद स्नातकोत्तर पंचम वर्षीय उपाधि पाठ्यक्रम में परीक्षा परीणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे। सम्बन्धित नियम 43-एच तथा 43-आई में तदनुसार उचित संशोधन किया जावे पर विचार विमर्श कर संस्तुति की कि इस प्रस्ताव को यथावत स्वीकार कर लिया जावे

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 82 द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर, 82 द्वारा श्री वेदप्रकाश शर्मा के प्रस्ताव "आयुर्वेद संकाय द्वारा क्लिनिकल एवं नॉन क्लिनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बद्ध महाविद्यालयों को निर्देश दिये जावे पर विचार विमर्श कर समिति ने संस्तुति की कि भगदत्त व्यवहार आयुर्वेद को पूर्णतः क्लिनिकल माना जावे क्योंकि वर्तमान में विशेष जन्म दूषि विष प्रभावित रोगी हर समय उपस्थित होते रहते हैं इसलिये रोगी रोग निर्णयार्थ एवं शमनार्थ विष विरोधन चिकित्सक का औपचार्य एवं आतुरालय में छात्रों के विशेष ज्ञानार्थ उपस्थित रहना आवश्यक है अतः इस विभागों को क्लिनिकल माना जावे।

(9) समिति ने आयुर्वेद संकाय की निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव संख्या 3, राजस्थान विश्वविद्यालय द्वारा आयुर्वेद महाविद्यालयों के लिये निर्धारित न्यूनतम आवश्यकताओं का नुनिश्चित रूप से पुनर्निर्धारण तत्त्व विषयों की सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जाय पर विचार विमर्श किया। समिति ने निर्णय लिया कि यह प्रस्ताव तत्काल प्रस्तुत किया गया है, तथा समस्त सदस्यों को न्यूनतम निर्धारित आवश्यकता का ज्ञान नहीं है, अतः निर्णय

से पूर्व केन्द्रीय भारतीय चिकित्सा परिषद द्वारा प्राप्त न्यूनतम योग्यताओं का जो उल्लेख है उसकी प्रति सभी सदस्यों को प्राप्त होने पर ही निर्णय किया जा सकता है। अतः न्यूनतम निर्धारित साधन सामग्री की सूचि प्राप्त होने पर ही उक्त निर्णय से सूचित किया जावेगा।

समिति की बैठक संयोजक को धन्यवाद के साथ समाप्त हुयी।

ह०/-
(मुकुट बिहारी शर्मा)
संयोजक

अनुलग्नक 1

संदर्भ : अगद तन्त्र एवं व्यवहार आयुर्वेदीय शिक्षण अनुसंधान समिति
दिनांक 22-3-83 संस्तुति संख्या 4)

(संदर्भ : अगदतंत्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति)
श्री अशोक कुमार शर्मा के प्रस्ताव संख्या 1 :—

“प्रथम वर्ष में प्रवेश की योग्यता केन्द्रीय सरकार की शिक्षा नीति के आधार पर (10 + 2) अर्थात् टी. डी. सी. प्रथम वर्ष (जीव विज्ञान एवं संस्कृत विषय ग्रुप के साथ) रखा जावे जो भारत के अधिकतर राज्यों में लागू है साथ यह प्रवेश योग्यता केन्द्रीय भारतीय चिकित्सा परिषद् द्वारा प्रवेश के लिए निर्धारित तीन प्रकार की योग्यता में एक प्रथम योग्यता है।

(द) उपर्युक्त प्रवेश योग्यता में यह आवश्यक हो कि प्रवेशार्थी संस्कृत, जन्तु विज्ञान, वनस्पति विज्ञान, रसायन विज्ञान तथा भौतिक विज्ञान विषयों सहित उत्तीर्ण हो।

(य) साथ ही प्रवेश के लिए उपरोक्त पाँचों विषयों में अलग-अलग विश्वविद्यालय से संबंधित विषय के विभाग द्वारा प्रश्न-पत्र सैट का कर टेस्ट लिया जावे जिस प्रकार पी. एम. टी. में होता है।

(द) प्रत्येक प्रश्न पत्र 100 अंक के हों तथा उनमें 100 वस्तुनिष्ठ प्रकार (मल्टीपल चॉइस टाइप) के प्रश्न हों। इस प्रकार कुल अंक 500 अंकों में टेस्ट लिया जावे।

(य) संस्थान के राष्ट्रीय स्वरूप के अनुरूप देश की विद्वानता को ध्यान में रखते हुये देश भर में इस प्रकार टेस्ट के लिए भिन्न 2 केन्द्र जैसे जयपुर, दिल्ली, इलाहाबाद, कलकत्ता, बम्बई, मद्रास आदि में प्रवेशार्थियों की संख्या के आधार पर रखा जावे।

(र) इसके साथ ही प्री-आयुर्वेद के “आयुर्वेद इतिहास, आयुर्वेद परिचय” विषय का अध्ययन एवं परीक्षा प्रथम वर्ष के अष्टांग सग्रह एवं पदार्थ विज्ञान विषय के साथ करवा लिया जावे।”

प्रस्ताव संख्या 6 :—

संस्थान के राष्ट्रीय स्वरूप के अनुरूप संस्थान में भिन्न-भिन्न भाषा भाषी राज्यों के छात्र अध्ययन करते हैं अतः परीक्षा प्रश्न-पत्रों को मूल संस्कृत के साथ ही हिन्दी भाषा में स्वान्तरण दिया जावे। एवं जहाँ-जहाँ उचित हो अंग्रेजी भाषा के भी ज़रूर प्रयोग किये जावे। परीक्षा के प्रश्न पत्र विभिन्न संस्थान भाषा में छाने हैं। जिसके कारण परीक्षार्थी प्रश्न का उत्तर जानने हुये भी सन्तुष्ट रूप में उत्तर नहीं दे पाता है।

परिशिष्ट VII

(नंदमं : आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 4 (VIII))

दिनांक 22/3/83 को मध्याह्न 12 बजे कुलपति सचिवालय विश्व-विद्यालय प्रांगण, जयपुर में सम्पन्न स्वस्यवृत्त विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. वैद्य हरि प्रसाद शर्मा (संयोजक)
2. वैद्य मदन लाल शर्मा
3. वैद्य रमा कान्त शर्मा
4. वैद्य मुरली मनोहर शरण
5. वैद्य दिनेश चन्द्र गोरड़िया

1. राजस्थान विश्वविद्यालय की हैण्डबुक भाग-2 के परिनियम संख्या 42 एफ (4) के अनुसार स्वस्यवृत्त विषयक आयुर्वेद शिक्षण एवं अनुसंधान समिति के संयोजनार्थ 3 वर्ष की कालावधि के लिए वैद्य हरि प्रसाद शर्मा को संयोजक नियुक्त किया गया ।

2 आयुर्वेद संकायान्तर्गत निम्नांकित परीक्षाओं के लिए निदिष्ट स्वस्य-वृत्त विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों, पाठ्य योजना, परीक्षा योजना आदि का निर्धारण करने की मण्डल को निम्नलिखित संस्तुति की गई :—

(अ) आयुर्वेदाचार्य (वैचलर आफ आयुर्वेदीय मैडिसिन एण्ड एर्जरी परीक्षा द्वितीय वर्ष, 1986

(अनुलग्नक-I)

(ब) आयुर्वेद वाचस्पति एम. डी. आयुर्वेद प्रथम खण्ड 1985 एवं द्वितीय खण्ड 1986

(अनुलग्नक-II)

3. आयुर्वेद संकाय की निम्न संख्या 10 दिनांक 11 जनवरी, 1983 के नंदमं में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, रसायनशालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प. रा. आयुर्वेद

महाविद्यालय सीकर के पत्र सं० 1637/80-81 दिनांक 17/10/81 पर विचार विमर्श कर निर्णय लिया गया कि—

राजस्थान विश्वविद्यालय से सम्बद्ध ऐसे आयुर्वेद महाविद्यालयों को इन्टर्नशिप के केन्द्र की स्वीकृति दी जाये जहाँ से आयुर्वेदाचार्य पंचम वर्ष की परीक्षा उत्तीर्ण करते हैं। इन नियम के अनुसार पं. राजस्थान आयुर्वेद महाविद्यालय, सीकर को इन्टर्नशिप केन्द्र की स्वीकृति दिये जाने की संस्तुति की गई।

4. आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष छात्र मंडल एवं मंडलमन्त्रि छात्र संघ राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11.1.83 में उल्लिखित प्रस्ताव संख्या 1 एवं 2 पर विचार विमर्श कर निर्णय लिया गया कि—

1. प्रस्ताव संख्या एक भारतीय चिकित्सा केन्द्रिय परिषद के पाठ्यक्रम के अनुरूप नहीं होने से अस्वीकृत किया गया।
2. प्रस्ताव संख्या 2 के संदर्भ में प्रश्न पत्र सरल संस्कृत भाषा में ही बनाये जायें।

5. आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री कृष्ण शर्मा, जयपुर के प्रस्ताव "स्नातकोत्तर कक्षाओं में प्रवेश के लिए कम से कम एक वर्षीय ग्री-आयुर्वेद पास व्यक्ति ही पात्र हो" पर विचार विमर्श कर अस्वीकृत किया गया।

6. आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री पूर्णमल मिश्र, शादुलपुर के निम्नांकित प्रस्ताव "जिन प्रकार मेडिकल संकाय में एम. डी. व एम. एस. में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष के पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष में हाउस जीव में मुक्ति रखते हुए प्रवेश देकर 2 वर्ष बाद एम. डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिए" पर विचार विमर्श कर निर्णय लिया गया कि 5 वर्ष के चिकित्सानुभव वाले चिकित्सकों को हाउस-जीव में मुक्ति दे सकते हैं परन्तु प्रथम वर्ष की परीक्षा जिसमें सभी सामान्य विषयों की परीक्षा देनी होती है मुक्ति नहीं किया जा सकता। अतः ऐसे चिकित्सकों को पाठ्यक्रम की पूर्ण अवधि 3 वर्ष में प्रथम वर्ष एवं द्वितीय वर्ष की परीक्षा उत्तीर्ण करने के बाद ही एम. डी. (वाचस्पति) की डिग्री दी जाना उचित है।

(7) आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री वेदप्रकाश शर्मा, जयपुर के “प्रस्ताव संख्या 4” आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणामों में, प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण एवं अनुत्तीर्ण होने का उल्लेख मात्र रहे। संबंधित नियम 43-एच तथा 43-आई में सदनसार उचित से शोधन पर विचार विमर्श कर स्वीकृत किया गया तथा संबंधित नियम 43-एच तथा 43-आई में सदनारूप संशोधन करने की संस्तुति की गई।

(8) आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मई, 1982 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11(च) दिनांक 22/23 सितम्बर, 81 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव” आयुर्वेद संकाय द्वारा क्लिनिकल एवं नोन क्लिनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था संबंध महाविद्यालयों को निर्देश दिये जावें “पर विचार विमर्श कर स्वस्थवृत के पाठ्यक्रम में उल्लिखित योगनिसर्गोपचार प्राकृतिक चिकित्सा संक्रमक रोगों का ज्ञान एवं चिकित्सा का समावेश होने के कारण स्वस्थ वृत के विभाग को क्लिनिकल विभाग के रूप में स्वीकार किये जाने की संस्तुति की गई।

(9) आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद वाचस्पति एम. डी. आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित मांग संख्या 2,3 एवं 5 पर विचार विमर्श कर संस्तुति की कि इस समिति से संबंधित नहीं है।

(10) (अ) आयुर्वेद संकाय की निश्चय संख्या 2(ज) दिनांक 11/12 जनवरी, 1983 एवं आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 7(iii) दिनांक 5/6 मार्च, 1982 के संदर्भ में आयुर्वेदाचार्य द्वितीय वर्ष 1983 से संबंधित पाठ्यक्रम में किए गए परिवर्तन के जेयांश संख्या 1 एवं 2 पर विचार विमर्श कर अस्वीकृत किया गया।

(व) आयुर्वेद वाचस्पति (स्वस्थवृत विषय) के पाठ्यक्रम आदि को निर्माण कर आयुर्वेद अध्ययन मण्डल के आगामी उपवेशन के समक्ष प्रस्तुत किये जाने की संस्तुति की गई।

(11) आयुर्वेद संकाय की निश्चय संख्या 11 दिनांक 11/12 जनवरी, 1983 के द्वारा श्री रमाकान्त शर्मा के प्रस्ताव पर विचार विमर्श कर इन

समिति द्वारा निमित्त स्वस्थवृत्त विभाग स्नातकोत्तर पाठ्यक्रम को भारतीय चिकित्सा केन्द्रीय परिषद को अनुमोदनार्थ एवं स्वीकृति हेतु प्रेषित किये जाने की संस्तुति की गई ।

संस्तुति संख्या 10 (द) का अवलोकन किया जावे ।

(12) आयुर्वेद संकाय की निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा से प्रस्ताव संख्या 3, "राजस्थान विश्वविद्यालय द्वारा नवबंध आयुर्वेद महाविद्यालयों के लिये निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुनर्निर्धारण तत्तद्विषयों की सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जाय" पर विचार विमर्ग स्वस्थवृत्त विभाग हेतु परिवर्तित एवं संशोधित न्यूनतम आवश्यकताओं की सूची तैयार कर प्रस्तुत की गई । अनुलग्न (III)

समिति के सभागत—सदस्य एवं विश्वविद्यालय के प्रतिनिधि श्री सतनामी शरण जी श्रीवास्तव के रचनात्मक सहयोग के प्रति आभार प्रकट कर सधन्यवाद कार्यवाही सम्पन्न की गई ।

ह./

(दोष्ट हरि प्रसाद शर्मा)

संयोजक

स्वस्थवृत्त विषयक शिक्षण एवं अनुसंधान समिति
राजस्थान विश्वविद्यालय, जयपुर ।

अनुलग्नक-I

(सन्दर्भ : दिनांक 22-3-83 की सम्पन्न स्वस्थवृत विषयक आयुर्वेदीय शिक्षण एवं अनु. सं. समिति की संस्तुति संख्या-2 (अ))

आयुर्वेदाचार्य (वैचलर ऑफ आयुर्वेदिक मेडिसिन एण्ड सर्जरी) द्वितीय वर्ष परीक्षा, 1986 :—

1. 1980 के संस्करण में प्रकाशित पाठ्यक्रम नियमावली में निम्न-लिखित संशोधन किये जाने की संस्तुति की गई :—

1. पेज नं० 28 पर वर्ग (ख) के अन्तर्गत लिखे गये “सामाजिक स्वस्थवृतम्” शब्द को निरस्त किया जाये।
2. पेज नं० 28 पर वायु के प्रसंग के अन्त में पर्यावरण प्रदूषण शब्द जोड़ा जाये।
3. पेज नं० 29 में ज्ञेयांश संख्या 16 के अन्तिम पद सत्युत्पत्तिक योग शब्दस्य व्याख्या भेदकताश्च” हटा दिया जाये।
4. पेज नं० 31 पर द्वितीय विभाग: सामाजिक स्वस्थवृतम् के ज्ञेयांश नं० 1 वायु वायोर्गुणाः से लेकर पेज नं० 32 की पक्ति नं० 2 के अशुद्ध मिश्रणांच को हटा दिया जाये क्योंकि इसका वर्णन प्रथम पत्र में आ चुका है।
5. पेज नं० 33 में ज्ञेयांश संख्या 13 के बाद स्वस्थवृतम् के साथ प्रायोगिक शब्द जोड़ा जाय तथा पूर्णांक 50 का निर्देश किया जाय।
6. पेज नं० 33 में प्रायोगिक स्वस्थवृत के ज्ञेयांश सं० 13 के बाद प्राधनवीन ज्ञेयांश संख्या 14 का सक्रामक रोगाणां नव्य प्रतिरोधोपायाच प्रायोगिकज्ञानम्” और जोड़ा जाय।
7. पाठ्य योजना में प्रत्येक प्रश्न पत्र के दो विभाग किये जाये ‘ए’ और ‘बी’ प्रत्येक भाग के 50 अंक पूर्व से ही निर्धारित हैं।
8. पाठ्यक्रम नियमावली को शुद्ध रूप से प्रकाशन के लिए प्रूफ आदि रखने के लिए वैद्य श्री रमाकान्तशर्मा, राष्ट्रीय आयुर्वेद संस्थान को अधिकृत किया गया।

अनुलग्नक II

(सन्दर्भ : दिनांक 22-3-83 को सम्पन्न स्वस्थवृत विषयक आ. शि. अनु. समिति की संस्तुति सं. 2 (व))

आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद) द्वितीय वर्ष का पाठ्यक्रम आयुर्वेद अध्ययन मण्डल के सम्मुख प्रस्तुत किया जायेगा।

अनुलग्नक III

(सन्दर्भ : दिनांक 22-3-83 को सम्पन्न स्वस्थवृत विषयक आ. शि. अनु. समिति की संस्तुति सं.-12)

स्नातक स्तर के आयुर्वेद महाविद्यालयों में स्वस्थवृत्त विभाग के लिए न्यूनतम निर्धारित आवश्यकताएँ :

स्थान :—

1. आचार्य कक्ष	1	12' × 16'
2. प्राध्यापक कक्ष	1	16' × 14'
3. प्रदर्शनालय	1	30' × 14'

इन्स्ट्रुमेण्ट्स :

1. स्वस्थवृत्तोपयोगी मॉडल्स एवं चार्ट्स
2. व्यायामचर्यादि के विभिन्न उपकरण
3. योगासन के चार्ट्स मॉडल्स आदि

चार्ट्स :—

1. जल की अशुद्धियाँ
2. जल का विशुद्धिकरण
3. जल से उत्पन्न होने वाले रोग
4. जीव तिविक्त
5. अन्न की मात्रा
6. अन्न के रोग
7. सन्तुलित आहार
8. वय-व्यवसाय भेद से आहार मात्रा
9. सामिप निरामिप आहार की तुलना
10. पाण्डुर्यवादि द्रव्यों के गुण कर्म
11. लघु एवं गुरु आहार के गुण कर्म
12. निन्दित अनिन्दित शाक
13. त्रय उपस्तम्भ
14. स्वस्थ पुरुष के लक्षण
15. दिनचर्या रात्रिचर्या
16. ऋतु निर्धारण
17. ऋतु चर्या
18. विभिन्न पदार्थों का तुलनात्मक संगठन (दूध, अन्न, शाक, फल)
19. आदर्श गृह
20. घृणास्वद व्यवसाय
21. मादक पदार्थों से उत्पन्न रोगों का विवरण
22. मादक पदार्थ

23. निन्दनीय पुरुष
24. शारीरिक विकार हेतु प्रकार
25. मानसिक विकार हेतु प्रकार

मॉडल्स :—

1. इन सेनिटेरी वेल
2. सेनिटेरी वेल
3. सेनिटेरी टैंक
4. वाटर वर्क्स
5. सैक्सन आफ सेन्ड फिल्टर
6. कन्ट्रोल आफ फिल्टर
7. मॉडल आफ फिल्टर हाउस
8. सैक्शन आफ केन्डी सिगल वैंड
9. मॉडल आफ सेप्टिक टैंक लैट्रिन
10. मॉडल आफ कऊ सेड
11. मॉडल आफ हाउस ड्रैज
12. डामेस्टिक सेवेज
13. पिट लैट्रिन
14. यूरिनल रेंजर फॉर पब्लिक यूज
15. ट्रिचिंग ग्राउण्ड
16. फ्लस लैट्रिन सिस्टम
17. मॉडल ऑफ सेनिटेरी विलेज
18. „ „ इन सेनिटेरी विलेज
19. हाऊस फाउन्डेसन्स
20. मॉडल ऑफ रुम
21. हूण्ड सक्शन पम्प

योगासन के चित्र :—

1. स्वस्तिकासनम्
2. गोमुखासनम्
3. वीरासनम्
4. कुर्मासनम्
5. कुक्कुटासनम्
6. उतानकूर्मासनम्

7. घनुरासनम्
8. यत्सेन्द्रासनम्
9. पश्चिमोत्तानासनम्
10. मयूरासनम्
11. शवासनम्
12. मुद्रासनम्
13. सिद्धासनम्
14. पदमासनम्
15. सिंहासनम्
16. सर्वांगासनम्
17. शीर्षासनम्
18. पवनमुक्तासनम्
19. भुजंगासनम्
20. हलासन
21. प्राणायाम
22. पटचक्र
23. मूल बन्ध
24. जालन्धर बन्ध
25. उड्डियान बन्ध

स्वस्थ वृत्त सम्बन्धी स्वास्थ्य प्रायोगशाला का प्राह्ण एवं उपकरण द्रव्यादिकों की सूचि पृथक् से तैयार करके आयुर्वेद ग्रन्थमय मण्डल के समक्ष प्रस्तुत किया जायेगा ।

(परिशिष्ट VIII)

(सन्दर्भ : आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या-8)

दिनांक 22 मार्च, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रंगण, जयपुर में आयोजित प्रस्तुतितंत्र, तथा स्त्रीरोग तथा बाल रोग विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति :

- 1- वैद नरहरि शास्त्री (संयोजक)
- 2- वैद्य वेद प्रकाश शर्मा
- 3- वैद्य रामभरोसे मिश्र
- 4- वैद्य राजेन्द्र पाल शर्मा

(श्रीमती कमलेश उपस्थित नहीं हो सकीं)

1. राजस्थान विश्वविद्यालय हैण्डबुक पार्ट 2 के परिनियम संख्या 42 एफ (4) के अन्तर्गत प्रस्तुतितंत्र, स्त्रीरोग, तथा बालरोग विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजक पद पर तीन वर्ष की कालावधि के लिए वैद्य नरहरि शास्त्री, प्राचार्य, म०मो०मा०राज० आयु० महा० उदयपुर को नियुक्त किया ।

2. आयुर्वेद संकायान्तर्गत चतुर्थ वर्ष आयुर्वेदाचार्य परीक्षा, 1988 के लिए निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्य पुस्तकों, पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल की निम्न संस्तुति की:-

(क) समिति के गत उपवेशनों के श्रेयाशों के संदर्भ में लिये गये निर्णयों के क्रियान्वयन हेतु विश्वविद्यालय द्वारा भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली को पृनः अनुरोध परमावश्यक है ।

(ख) "कोमार भृत्य" विषय के क्रियात्मक परीक्षा के श्रेयाशों में उल्लिखित निम्नांकित प्रकरणों को कोमार भृत्य विषय के अन्तर्गत रखना व्यावहारिक नहीं होने से इन्हें हटाया जाना उपयुक्त होगा :-

(i) मलमूत्र परीक्षा, गर्भपात घातुपरीक्षा, रक्त परीक्षा

(ii) स्नावपरीक्षा, प्रकृति:-विकृतिवश्च

(iii) मोनिपरीक्षा, प्रकृति:-विकृतिवश्च

(3) समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में, आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, रसायन शालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प०रा० आयुर्वेद महाविद्यालय, सीकर के पत्र संख्या 1 637/80 81 दिनांक 12/10/81 पर विचार विमर्श कर संस्तुति की कि सम्बद्धता प्राप्त आयुर्वेद महाविद्यालय के लिए नियमानुसार न्यूनतम रोगी शायें निर्धारित हैं जिनकी पूर्ति हो जाने पर इन्टर्नशिप हेतु अन्यत्र व्यवस्था की आवश्यकता नहीं रहती है।

(4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11 12 जनवरी, 83 के संदर्भ में, श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महासचिव, छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/ 3/83 में उल्लिखित प्रस्ताव संख्या 1 व 6 पर विचार विमर्श किया।

समिति ने संस्तुति की कि प्रस्ताव संख्या 1 व 6 भारतीय चिकित्सा केन्द्रीय परिपद को नीति तथा निर्देशों के अनुरूप नहीं होने से स्वीकार योग्य नहीं। प्रश्न पत्र सरल संस्कृत में दिये जाने के निर्देश परीक्षकों के लिए अत्यावश्यक हैं।

(5) समिति ने आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11/12 जनवरी, 83 के संदर्भ में, श्री श्रीकृष्ण शर्मा, जयपुर के "प्रस्ताव स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो" पर विचार विमर्श किया।

समिति ने संस्तुति की कि स्नातकोत्तर कक्षाओं में प्रवेश के लिए प्री-आयुर्वेद परीक्षा की उत्तीर्णता व्यावहारिक नहीं रहने में श्री श्रीकृष्ण शर्मा के प्रस्ताव पर विचार अग्रित किया।

(6) समिति ने आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11 12 जनवरी, 1983 के संदर्भ में श्री पूर्णमल मिश्र, के प्रस्ताव "जिस प्रकार मैट्रिकल संकाय में एम० डी० या एम०एस० में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाउस जोब में भुक्त रखते हुये प्रवेश देकर 2 वर्ष बाद एम० डी० (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये)" पर विचार विमर्श किया।

समिति ने संस्तुति की कि वाचस्पति (एम. डी. आयुर्वेद खण्ड प्रथम परीक्षा में प्रवेश के लिए वांछनीय एक वर्षीय हाउस जोव के प्रतिवन्ध से 5 वर्ष के चिकित्सानुभव वाले स्नातक को मुक्त किया जा सकता है, परन्तु प्रथम खण्ड परीक्षा उत्तीर्ण किये बिना सीधे अन्तिम खण्ड परीक्षा देने का अधिकार समिति के विचार से उपयुक्त नहीं रहेगा।

(7) समिति ने संकाय के निश्चय संख्या 16, दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव "आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे, सम्बन्धित नियम 43-एच तथा 43-1 में तदनुसार उचित संशोधन किया जावे" पर विचार विमर्श किया।

समिति ने संस्तुति की कि समिति द्वारा सिद्धान्तः स्वीकार किया जाता है।

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11(च) दिनांक 22/23 सितम्बर, 1981 के द्वारा श्री वेद प्रकाश शर्मा के प्रस्ताव "आयुर्वेद संकाय द्वारा क्लीनिकल एवं नान क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बद्ध महाविद्यालयों को निर्देश दिये जावे" पर विचार विमर्श किया।

समिति ने संस्तुति की कि प्रसूति तंत्र-स्त्री रोग एवं कीमारभृत्य विषय का सम्बन्ध प्रत्यक्ष रूप से चिकित्सालय और रोगियों से रहता है। विभाग में कार्यरत अध्यापक/चिकित्सक वर्ग की क्लीनिकल इयूटी नियमित रूप से रहती है। अतः यह विभाग असांक्षित्य रूप से क्लीनिकल है।

(9) आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 82 के संदर्भ में आयुर्वेद वाचस्पति (एम० डी० आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित निम्न मांग संख्या 2,3 एवं 5 पर विचार विमर्श किया :—

"(2) पाठ्यक्रम की सीमा निर्धारित की जावे तथा जो विषय संक्षिप्त में दिये हैं तथा जिनकी कोई भी आखिरी सीमा नहीं है। उन्हें पाठ्यक्रम में खुलासा करके लिखा जाये।"

“(3) प्रश्न पत्र तथा पाठ्यक्रम दोनों को ही दो खण्डों में क्रमशः खण्ड ‘क’ एवं खण्ड ‘ख’ में बांटा जाये।”

“(5) प्रायोगिक का पाठ्यक्रम निर्धारित किया जावे।”

मांग संख्या 2 :— समिति ने संस्तुति की कि पाठ्यक्रम में प्रत्येक विषय के जेयंश पूर्व से ही निर्धारित हैं जिनका विस्तार स्नातकोत्तर स्तर के पाठ्यक्रम के लिए उचित नहीं रहेगा।

मांग संख्या 3 :—आयुर्वेद वाचस्पति अन्तिम खण्ड में प्रत्येक प्रश्न पत्र का परीक्षक एक ही रहता है, अतः प्रश्न पत्र की ओर पाठ्यक्रम के ‘क’ एवं ‘ख’ में विभक्त करने की आवश्यकता नहीं है। प्रथम खण्ड के प्रत्येक विषय और प्रश्न पत्र में ‘क’ और ‘ख’ विभाग पूर्व से निर्धारित हैं।

मांग संख्या 5 :—समिति से सम्बन्धित विषय प्रसूतितंत्र, स्त्रीरोग एवं कौमारभृत्य आयुर्वेद वाचस्पति प्रथम खण्ड में है ही नहीं जिसका प्रायोगिक पाठ्यक्रम निर्धारित किया जाता है। खण्ड द्वितीय की प्रायोगिक परीक्षा के परीक्षा विषय प्रमुखतः ग्रन्थों के महानिबन्ध से सम्बद्ध प्रकारण ही रहता है जिसे सीमावद्ध करना सम्भव नहीं होने से प्रायोगिक पाठ्यक्रम का निर्धारण उपयुक्त भी रहेगा। इतार प्रश्न पत्रों से सम्बन्धित प्रश्न प्रायोगिक परीक्षा में आनुषंगिक रूप से रहते हैं। अतः इस मांग पर विचार स्थगित किया जाता है।

(10) प्रसूतितंत्र, स्त्री रोग विषय के प्रायोगिक प्रत्यक्ष कर्माभ्यास प्रशिक्षण के लिए सम्बद्ध प्रत्येक आयुर्वेद महाविद्यालय में सुविधा सम्पन्न प्रसवागार आवश्यक है। उपयुक्त व्यवस्था की पूर्ति पर्यन्त प्रशिक्षणोपयोगी प्रतिष्ठानों की शैक्षणिक यात्रा में अनिवार्य होनी चाहिये।

(11) कौमारभृत्य विषय को स्वतंत्र विभाग के रूप में प्रतिष्ठित किये जाने के श्री नरहरि शास्त्री के प्रस्ताव की संस्तुति की जाती है। स्नातक स्तर पर्यन्त स्वतंत्र अस्तित्व के बिना इस विषय को स्नातकोत्तर हेतु विकसित करने में व्यावहारिक दृष्टि से अनेक कठिनाइयां सम्भावित हैं। अष्टांग आयुर्वेद के अन्तर्गत वर्णित इस प्रमुख विभाग को स्वतंत्र विभाग के रूप में रखा जाना परमावश्यक है।

(12) समिति ने आयुर्वेद संकाय की निश्चय संख्या 16 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव संख्या 3 “राजस्थान विश्वविद्यालय द्वारा सम्बद्ध आयुर्वेद महाविद्यालयों के लिए

निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुननिर्धारण तद् विषयों की सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जावे” पर विचार विमर्श कर संस्तुति की :—प्रसूतिचक्र, स्त्री रोग और कौमारभृत्य विभाग के लिए निर्धारित किये जाने योग्य न्यूनतम आवश्यकताओं का प्रारूप निम्न रूप से प्रस्तावित है :—

अपेक्षित स्टाफ	पद	महाविद्यालय स्तर	
		अधिस्नातक	स्नातकोत्तर
प्रोफेसर		—	1
एसोसियेट प्रोफेसर/रीडर		1	2
असिस्टेंट प्रोफेसर		1	2
लेक्चरर		1	2
डिप्लोमेट/क्लीनिकल रजिस्ट्रार		3	3
प्रदर्शनशाला सहायक		1	1
क्लर्क कम टाइपिस्ट		1	1
चतुर्थ श्रेणी		1	2
आर्टिस्ट		—	1

नोट :—कौमारभृत्य विभाग के स्वतंत्र हो जाने पर उपर्युक्त स्टाफ कौमारभृत्य विभाग के लिए भी अपेक्षित रहेगा ।

भवन :—कक्ष-विभागाध्यक्ष, कार्यालय, स्टाफ के अनुरूप उपयुक्त स्थान । विभागीय प्रदर्शनशाला एवं संग्रहालय, बहिरंग एवं अन्तरंग चिकित्सालय-आवश्यक सामग्री सहित । रोगी शय्याओं भारतीय केन्द्रीय चिकित्सा परिषद के सामान्य नियमानुसार रखी जाये । प्रसव कक्ष और प्रसवागार अपेक्षित साधन सामग्री सहित ।

साधन सामग्री :—विभागीय कक्षा और चिकित्सालय तथा प्रसवागार हेतु आवश्यक फर्निचर (ii) प्रकृत प्रसव सामान्य परीक्षण प्रकृतिचक्र एवं स्त्री रोग विज्ञान से सम्बद्ध सामान्य कर्मों के लिए अपेक्षित विधि यन्त्र शास्त्र ।

(iii) प्रसूतितंत्र-स्त्रीरोग विज्ञान एवं कीमारभृत्य विषय से सम्बन्धित विविध ।

समिति की बैठक संयोजक को धन्यवाद के साथ समाप्त हुई ।

ह०/-

(नरहरि शास्त्री)

संयोजक

सन्दर्भ ; आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 9

(परिशिष्ट IX)

दिनांक 2/4/83 को मध्याह्न 12 बजे कुलपति सचिवालय विश्व-विद्यालय प्राणंग, जयपुर में सम्पन्न काय चिकित्सा विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. वैद्य राम प्रकाश स्वामी, (अध्यक्ष)
2. वैद्य शंकर लाल त्रिवेदी
3. वैद्य राजेन्द्र प्रकाश भटनागर
4. वैद्य प्रभुदत्त शास्त्री
5. वैद्य श्रीराम शर्मा

(1) राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिणियम संख्या 42 एफ (4) के प्रावधानान्तर्गत आयुर्वेद शिक्षण एवं अनुसंधान समिति की इस बैठक का संचालन हेतु वैद्य राम प्रकाश स्वामी, प्राचार्य, राष्ट्रीय आयुर्वेद संस्थान, जयपुर को नियुक्त किया गया । संयोजक की नियुक्ति के सम्बन्ध में आइटम इस समिति की आगामी बैठक की कार्य-सूची में सम्मिलित कर लिया जावे ।

(2) समिति ने आयुर्वेद संकायान्तर्गत निम्नांकित परीक्षाओं के लिए निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों, पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल की संस्तुति की :—

चतुर्थ एवं पंचम वर्ष, आयुर्वेदाचार्य परीक्षा, 1989

आयुर्वेदाचार्य पाठ्यक्रम में चतुर्थ एवं पंचम वर्ष में काय चिकित्सा का अध्ययन-अध्यापन कराया जाता है परन्तु परीक्षा पंचम वर्ष के अन्त में होती है । प्रायः देखा गया है कि परीक्ष्य विषय नहीं होने से छात्र एवं अध्यापक चतुर्थ वर्ष में इस विषय में अपेक्षा एवं अरुचि दिखाते हैं अतः मेरा विनम्र सुझाव है कि काय चिकित्सा के चार प्रश्न पत्रों को परीक्ष्य विषय की दृष्टि से निष्ट क्रम से विभक्त किया जाय जिससे यह दुविधा समाप्त हो सके ।

चतुर्थ वर्ष — (1) प्रथम प्रश्न पत्र: चिकित्सा सिद्धान्त एवं दूनानी व सिद्ध

(2) द्वितीय प्रश्न पत्र पंचकर्म रसायन वाजीकरण

पंचम वर्ष — (1) प्रथम प्रश्न पत्र ज्वरादि रोग

(2) द्वितीय प्रश्न पत्र बालयाधि मानस रोग,
अत्यक चिकित्सा

--प्रायोगिक को भी थ्योरी के अनुसार ही दोनों दफों में विभक्त कर दिया जाय—

प्रायोगिक परीक्ष्य पाठ्यांश :

चतुर्थ वर्ष :—

श्रंक 100 पाठ्यांश : (1) आतुर चिकित्सा विधानम् (2) प्रायोगिक पंजिका
30 15
(3) पंचकर्म प्रायोगिकी पंजिका (4) मौखिक
15 40

पंचम वर्ष :—

श्रंक 100 पाठ्यांश :—(1) बालव्याधिमानसव्याधीनां चिकित्सा विधानम्
15
(2) आत्ययिक चिकित्सा व्यवस्था
15
(3) प्रायोगिक पंजिका (4) मौखिकम्
30 40

इस प्रस्ताव को स्वीकृत करते हुए समिति ने संस्तुति की कि इस प्रकार की परीक्षा योजना पर अध्ययन मण्डल विचार करे ।

समिति ने यह भी निर्णय लिया कि काय चिकित्सा के प्रश्न पत्र 4 में आत्ययिक चिकित्सा के सम्बन्ध में निम्नानुसार संशोधन किया जाय—

काय चिकित्सा : प्रश्न पत्र : 4 में निम्न संशोधन अपेक्षित है :—

“काय चिकित्सा साध्य रोगाणायात्यिकावस्थापरिचयः तच्चिकित्साविधयश्च ।”

इस सम्बन्ध में यह भी निर्णय लिया गया कि इस विषय के पाठ्यांश एवं ज्ञेयांशों की रूपरेखा श्री राजेन्द्र प्रकाश भटनागर, आयुर्वेद कालेज, उदयपुर तैयार कर इस समिति के सभी सदस्यों को प्रेषित करेंगे एवं पत्र व्यवहार द्वारा उनके उपयोगी सुझाव एवं संशोधन-परिवर्तन-परिवर्धन को आमन्त्रित करेंगे । अनन्तर समस्त सुझावों सहित संकलित साहित्य संयोजक महोदय को प्रेषित करेंगे ताकि वे बोर्ड की आगामी बैठक में प्रस्तुत करेंगे ।

(3) समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11 जनवरी, 83 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर

अध्ययन के लिए चिकित्सालयों, रसायनशालयों तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प. रा. आयुर्वेद महाविद्यालय, सीकर के पत्र संख्या 1637/80-81 दिनांक 12/10-81 पर विचार विमर्श किया।

समिति यह निर्णय लिया कि राजस्थान विश्वविद्यालय से सम्बद्धता प्राप्त महाविद्यालयों, चिकित्सालयों, रसायनशालाओं एवं अन्य विभाग इन्टर्नशिप के लिए मान्य होने चाहिए। इनके अतिरिक्त वे चिकित्सालय जिनमें अन्तरंग विभाग भी हों और सम्बद्धित विषयों की 10 शैध्याएं हों तो सस्था के आवेदन पर उन्हें मान्य किये जाने पर विचार किया जा सकता है। इसी प्रकार रसायन शालाएं भी निर्माणजिनमें स्नातक स्तरीय पाठ्यक्रम के लिए आवश्यक औपध की सुविधाएं उपलब्ध हों, उनके आवेदन करने पर केवल उन रसायनशालाओं के रसायनशाला के इन्टर्नशिप के लिए मान्य किया जा सकता है।

(4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11 जनवरी, 83 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महा-सचिव छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11-1-83 में उल्लिखित प्रस्ताव संख्या 1 व 6 पर विचार विमर्श किया।

समिति ने संस्तुति की कि इस सम्बन्ध में सैन्ट्रल कौंसिल से निर्णय प्राप्त किया जाय। प्रश्न पत्रों की भाषा के सम्बन्ध में समिति द्वारा यह निर्णय लिया गया की सैन्ट्रल कौंसिल के निर्देशानुसार प्रश्न-पत्रों का निर्णय सरल संस्कृत भाषा में ही हो। परीक्षकों को सूचना दी जावे कि वे प्रश्न पत्र सरल संस्कृत में ही बनावें एवं क्लिष्ट संस्कृत का उपयोग नहीं करें।

(5) समिति ने आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री श्रीकृष्ण शर्मा, जयपुर के प्रस्ताव संख्या तीन पर स्नातकोत्तर कक्षाओं में प्रवेश के लिए कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो" पर विचार विमर्श किया।

समिति ने संस्तुति की कि प्रस्ताव के सम्बन्ध में सैन्ट्रल कौंसिल से निर्णय प्राप्त किया जाय।

(6) समिति ने आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11 जनवरी, 83 के संदर्भ में श्री पूर्णमल मिश्र सादुलपुर के प्रस्ताव जिस प्रकार मैट्रिकल संकाय में एम. डी. या एम. एन. में प्रवेश लेने वाले 5 वर्ष के चिकि-

त्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाउस-जोब से मृक्त रखते हुए प्रवेश देकर 2 वर्ष बाद एम. डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये ।” पर विचार विमर्श किया ।

समिति ने संस्तुति की कि इस प्रस्ताव के सम्बन्ध में सेंट्रल कौंसिल से निर्णय प्राप्त किया जाना चाहिये ।

(7) समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव संख्या 4 “आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे सम्बन्धित नियम 43 एच तथा 43-1 तदनुसार उचित संशोधन किया जाये” पर विचार विमर्श किया ।

समिति ने संस्तुति की कि इस प्रस्ताव के संबन्ध में निर्णय लिया गया कि आयुर्वेद वाचस्पति प्रथम खण्ड के प्रश्न पत्रों पर परीक्षा परीणाम में प्राप्तांकों का उल्लेख किया जाय, परन्तु आयुर्वेद वाचस्पति द्वितीय खण्ड के परीक्षा परिणाम में उत्तीर्ण अथवा अनुत्तीर्ण के रूप में ही घोषणा की जाये ।

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11 (च) दिनांक 22/23 सितम्बर 81 के द्वारा श्री वेदप्रकाश शर्मा के प्रस्ताव “आयुर्वेद संकाय द्वारा क्लीनिकल एवं नान-क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बन्ध महाद्यालयों को निर्देश दिये जावें ” पर विचार विमर्श किया ।

समिति ने संस्तुति की कि इस प्रस्ताव पर विचार करते हुए समिति ने निर्णय लिया की क्या चिकित्सा विभाग पूर्णतया क्लीनिकल विभाग है इसके नान क्लीनिकल होने का प्रश्न ही उपस्थित नहीं होता है ।

(9) समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 82 के द्वारा आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित भाग संख्या 2, 3 एवं 5 पर विचार विमर्श किया ।

समिति ने संस्तुति की कि इसे आगामी अधिवेशन में विचाराय रखा जावे ।

(10) समिति ने आयुर्वेद संकाय की निश्चय संख्या 16 दिनांक 11 12 जनवरी 1983 के संदर्भ में श्री वेदप्रकाश शर्मा के प्रस्ताव संख्या 3 “रा-जस्थान विश्वविद्यालय द्वारा सम्बद्ध आयुर्वेद विश्वविद्यालयों के लिए निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुननिर्धारण तत्तद् विषयों की सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जाने” पर विचार विमर्श किया ।

समिति ने संस्तुति की कि प्रस्ताव को स्वीकार किया जावे ।

समिति के अध्यक्ष श्री राम प्रकाश स्वामी के धन्यवाद ज्ञापन के साथ समिति की बैठक विसर्जित हुई ।

ह०/-
राम प्रकाश स्वामी
अध्यक्ष

(संदर्भ : आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 10)

(परिशिष्ट X)

दिनांक 23 मार्च, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय, विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न शालाक्यतंत्र विषयक आयुर्वेदीय शिक्षण-एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. डा. श्रीकृष्ण शर्मा
2. श्री नरहरि पाण्ड्या
3. श्री पूर्णमल मिश्र
4. डॉ. जी. एल. वोड्खा
5. श्री वृजमोहन वर्मा (संयोजक)

(1) राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिनियम संख्या 42 एफ (4) के प्रावधानान्तर्गत शालाक्य तंत्र विषय की शिक्षण एवं अनुसंधान समिति के संयोजक की नियुक्ति हेतु आयुर्वेद अध्ययन मण्डल के सदस्य श्री वृजमोहन वर्मा, परशुराम पुरिया आयुर्वेद महाविद्यालय, सीकर को नियुक्त करने हेतु निर्णय लिया गया ।

(2) समिति ने आयुर्वेद संकायान्तर्गत निम्नांकित परीक्षाओं के लिए निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों, पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल की संस्तुति की :—

1. चतुर्थ वर्ष आयुर्वेदाचार्य (वैचलर आफ आयुर्वेदिक मेडीसन एण्ड सर्जरी) परीक्षा, 1988
2. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) प्रथम खण्ड परीक्षा, 1985.
3. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) द्वितीय खण्ड परीक्षा 1986.
1. चतुर्थ वर्ष आयुर्वेदाचार्य परीक्षा, 1988 (यथावत)
2. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) प्रथम खण्ड परीक्षा, 1985 विश्वविद्यालय सिलेबस संस्करण 1981 के पृष्ठ संख्या 4,9 5, विषय संख्या 4 एवं 5 के स्थान पर संबंधित विषयक व्यवित्तियों के सम्बन्धित निदान एवं चिकित्सा होना चाहिये ।

3. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) द्वितीय खण्ड परीक्षा, 1986 समिति ने संस्तुति की कि द्वितीय खण्ड उत्तीर्ण होने पर पृथक-पृथक अंकों का उल्लेख अंक सूचि में नहीं किया जावे एवं परिणाम सफल अथवा 'असफल' शब्द से ही घोषित किया जावे।"

(3) समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों तथा रसायन शालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, प. रा. आयुर्वेद महाविद्यालय सीकर के पत्र संख्या 1637/80-81 दिनांक 12/10/81 पर विचार विमर्श किया।

समिति ने संस्तुति की संलग्न कि पत्रों के अवलोकन से 95 शाय्याओं की व्यवस्था है ऐसा ज्ञात होता है कि आयुर्वेदाचार्य का यहाँ अध्ययन सम्पन्न होता है अतः इन्टर्नशिप की स्वीकृति दिया जाना भी आवश्यक है।

(4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महासचिव, छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित प्रस्ताव संख्या i व 6 पर विचार विमर्श किया।

समिति ने संस्तुति की प्रस्ताव संख्या 1 के सम्बन्ध में राजस्थान एवं भारतवर्ष के कई राज्यों में अभी 10/2 स्कीम लागू नहीं हो पाई है अतः वर्तमान में प्रचलित ग्री-आयुर्वेद परीक्षा रखा जाना उचित है।

राजस्थान विश्वविद्यालय से सम्बन्ध महाविद्यालयों में वर्तमान में प्रचलित नियमों के एवं प्रवेश पद्धति के अनुसार ही प्रवेश दिये जाने उचित हैं सम्पूर्ण प्रवेश केन्द्र स्थान जयपुर में सभी प्राचार्यों की कमेटी द्वारा किये जाने उचित हैं।

प्रस्ताव व्यवस्था उचित है।

(5) समिति ने आयुर्वेद संकाय की निश्चय संख्या 14 दिनांक 11 जन-1983 के संदर्भ में श्री श्रीकृष्ण शर्मा, जयपुर के प्रस्ताव "स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय ग्री-आयुर्वेद पाठ व्यक्ति ही पाठ हो" पर विचार विमर्श किया।

समिति ने संस्तुति की कि स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र होने चाहिये। किन्तु राजस्थान विश्वविद्यालय में आयुर्वेद संकाय के प्रारम्भ से पूर्व के स्नातकों के लिये यह प्रतिबन्ध नहीं होना चाहिये। इसी प्रकार से संकाय बनने से पूर्व के स्नातकों के लिये 6 माह की इन्टर्नशिप की अनिवार्यता के स्थान पर कम से कम 10 वर्ष कार्यानुभव मान्य समझा जाना चाहिये।

(6) समिति ने आयुर्वेद संकाय की निश्चय संख्या 15 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री पूर्ण मल मिश्र, सादुलपुर के प्रस्ताव "जिस प्रकार मेडिकल संकाय में एम० डी० में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाउस जोब से मुक्त रखते हुये प्रवेश देकर 2 वर्ष बाद एम. डी. (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिए" पर विचार विमर्श किया।

समिति ने संस्तुति की कि आयुर्वेद संकाय में 5 वर्ष के चिकित्सानुभव वाले व्यक्ति का स्नातकोत्तर पाठ्यक्रम के लिये निर्धारित एक वर्षीय हाउस जोब से मुक्त रखा जाना चाहिये किन्तु उक्त सम्बन्धित व्यक्ति के लिये पाठ्यक्रम 2 वर्ष का होते हुये भी उसके द्वारा प्रथम वर्ष के प्रश्न पत्र (सैद्धान्तिक एवं प्रायोगिक) द्वितीय खण्ड की परीक्षा में स्वीकार होने से पूर्व पास कर लिये जाने चाहिये।

(7) समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव "आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनुत्तीर्ण होने का उल्लेख मात्र रहे। सम्बन्धित नियम 43-एच तथा 43-आई में तदनुसार उचित संशोधन किया जावे" पर विचार विमर्श किया।

समिति ने संस्तुति की कि उक्त प्रस्ताव से सहमति प्रस्तावित की जाती है।

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च 82 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11(ब) दिनांक

82 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11(च) दिनांक 22/23 मिनम्बर, 1981 के द्वारा श्री वेद प्रकाश जर्मा के प्रस्ताव “आयुर्वेद संकाय द्वारा क्लीनिकल एवं नान-क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बन्ध महाविद्यालयों को निर्देश दिये जावें” पर विचार विमर्श किया।

समिति ने संस्तुति की कि शालाक्य विषय क्लीनिकल विषय अब तक माना जाता रहा है। यह क्लीनिकल प्रकृति का विषय है अतः शालाक्य विषयक को ही क्लीनिकल विषय ही माने जाने हेतु प्रास्तावना की जाती है।

9. समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च 82 के द्वारा आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित मांग संख्या 2, 3 एवं 5 पर विचार विमर्श किया।

मांग संख्या 2 पर समिति ने संस्तुति की आयुर्वेद वाचस्पति के पाठ्य-क्रम का सीमा निर्धारण अव्यावहारिक है अतः उचित नहीं है।

मांग संख्या 3 पर समिति ने संस्तुति की कि जेयांशों का विभाजन उचित नहीं है किन्तु प्रश्न पत्र निर्माण—दो खण्डों में होना चाहिये खण्ड ‘ख’ के तीन प्रश्न अन्तरंग परीक्षक बनाकर विश्वविद्यालय में भिजवा दें एवं प्रश्न ‘क’ ‘अ’ भाग माना जाकर विश्वविद्यालय बाहिरंग परीक्षक को भिजवा दें—यह (बाहिरंग परीक्षक) उक्त दोनों प्रश्नों को देखकर उनसे अलग जेयांशों के तीन प्रश्न बना दें—जिससे खण्ड ‘व’ माना जावे—इस प्रकार प्रश्न पत्र के दो खण्डों में से खण्ड ‘अ’ का परीक्षक इन्टर्नल परीक्षक करें एवं खण्ड “व” का एक्सटर्नल परीक्षक करें।

मांग संख्या 5 पर समिति ने संस्तुति की कि प्रायोगिक पाठ्यक्रम निर्धारण अव्यावहारिक है।

10. समिति ने आयुर्वेद संकाय की निश्चय संख्या 16 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री वेद प्रकाश जर्मा के प्रस्ताव संख्या 5 “राजस्थान विश्वविद्यालय द्वारा सम्बद्ध आयुर्वेद महाविद्यालयों के लिए निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुनर्निर्धारण तत्सद् विषयों को तभी अनुसन्धान एवं शिक्षण समितियों द्वारा किया जावे” पर विचार विमर्श किया।

समिति ने संस्तुति की कि भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित एवं आयुर्वेद संकाय के 1974 की कार्यवाही विवरण में मानदण्डों को ही मान्य किया जाना चाहिये ।

अन्त में सदस्यों को ज्ञापन के साथ समिति की कार्यवाही पूर्ण की गई ।

ह०/-
(ब्रजमोहन वर्मा)
संयोजक

(संदर्भ : आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 11)

(परिशिष्ट XI)

दिनांक 23 अप्रैल, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में शल्यतंत्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. वैद्य बदरी नारायण शर्मा (संयोजक)

2. वैद्य मदन कुमार शास्त्री

3. वैद्य श्याम सुन्दर शर्मा

4. वैद्य सुदेव चन्द्र पाराशरी

(1) राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिनियम संख्या 42एफ (4) के प्रावधान के अन्तर्गत, आयुर्वेदीय शिक्षण एवं अनुसंधान समिति शल्यतंत्र विषय के तीन वर्ष की अवधि के लिये संयोजक पद हेतु वैद्य श्री बदरी नारायण शर्मा, प्रोफेसर, राष्ट्रीय आयुर्वेद संस्थान, जयपुर को सर्वसम्मति से चयनित किया गया ।

(2) समिति ने संकायान्तर्गत निम्नांकित परीक्षाओं के लिये निर्दिष्ट विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों, पाठ्य-योजना एवं परीक्षा को योजना निर्धारित करने की मण्डल को संस्तुति की :—

1. चतुर्थ वर्ष आयुर्वेदाचार्य परीक्षा, 1988

2. पंचम वर्ष आयुर्वेदाचार्य परीक्षा, 1989

3. प्रथम खण्ड आयुर्वेद वाचस्पति परीक्षा, 1985

4. द्वितीय खण्ड आयुर्वेद वाचस्पति परीक्षा, 1986

चतुर्थ वर्ष आयुर्वेदाचार्य परीक्षा, 1988 :—

1. विश्वविद्यालय 1981 संस्करण सिनेक्स में पृष्ठ संख्या 73 में पंचम पंक्ति में व्याधिप्रयोग के बजाय प्रगति : 1 और जोड़ा जावे ।

2. पृष्ठ संख्या 73 पर पंक्ति 17 में वितर्क शब्द के आगे आदि शब्द हटाया जाना चाहिये ।

3. पृष्ठ 73 में अन्तिम में पंक्ति में लिखित “विशिष्ट सूत्र कर्मानुसार पूर्वकम्” वाक्य को हटाकर “विशिष्ट पूर्व कार्यनुसारी” वाक्य लिखा जावे ।

पृष्ठ 74 में संज्ञानाश के स्थान पर संज्ञाहरण शब्द लिखें ।

पृष्ठ संख्या 74 पंक्ति 11 में अर्बुदो ग्रान्यश्च कर्कटावुदः ऊर्ध्ववुदः यह संशोधित कर अंकित किया जावे ।

पृष्ठ 74 पंक्ति 14 में प्रतान ग्रन्थि शब्द के आगे स्नायूनां ग्रन्थिः अर्बुदंच यह लिखा जावे ।

पृष्ठ 74 में पंक्ति अन्तिम में “पृष्ठे ग्रन्थि ग्रन्थाविकृति” के स्थान पर पृष्ठवंश संधि विकृतिः लिखा जावे ।

पृष्ठ 75 में पंक्ति 12 में उन्नादलिकाक्षयः के स्थान पर उन्ननलिकायाः क्षयः, सान्निरोधः किया जावे ।

पृष्ठ 76 में पंक्ति 2 में प्रारम्भ में वृक्कः शब्द और जोड़ा जावे ।

पृष्ठ 76 में पंक्ति 12 में अन्ववृद्धि के आगे “विच्युतिः और लिखा जावे ।

पृष्ठ 76 में पंक्ति 13 पर नाभिजा लिखें । इस पंक्ति से संज्ञानाश विषयक वाक्य को हटाकर “संज्ञाहरणमूला, विशिष्ट नैदानिकयोकरण परिचयंच । यह वाक्य अंकित किया जावे ।

पृष्ठ संख्या 76 में आलोच्च ग्रन्थों की सूचि में क्रम संख्या 8 के बाद 9 में शल्यतंत्र समुच्चयः वैद्य वामदेव शर्मा तथा क्रम संख्या 10 में शल्यविज्ञान सुरेन्द्र कुमार शर्मा दोनों भाग इस प्रकार संयुक्त किया जावे ।

आयुर्वेद वाचस्पति प्रथम खण्ड परीक्षा, 1985 तथा आयुर्वेद वाचस्पति खण्ड II उत्तरार्ध परीक्षा, 1986 के मुद्रित पाठ्यक्रम को ही यथावत मान्य करने की संस्तुति की ।

(3) समिति ने आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 11/12 जनवरी, 1983 के संदर्भ में आयुर्वेद महाविद्यालय में इन्टर्नशिप तथा स्नातकोत्तर अध्ययन के लिए चिकित्सालयों, रसायन शालाओं तथा अन्य विभागों को मान्यता प्रदान करने के लिए मापदण्ड तथा नियमों के निर्धारण हेतु प्राचार्य, पं० रा० आयुर्वेद महाविद्यालय सीकर के पत्र संख्या 1637/80-81 पर विचार विमर्श किया ।

समिति ने संस्तुति की कि सीकर में 60 शैयाएँ हैं, तथा राजकीय चिकित्सालय, सीकर में 15 एवं श्री कल्याण अरोग्य सदन, सीकर में 20 शैयाएँ उपलब्ध हैं जिन पर इन्टर्नशिप करने का अवसर छात्रों को प्रदान करनी स्वीकृति सभी सम्बन्धित अधिकारियों से प्राप्त हो गई है, केवल विश्व-विद्यालय द्वारा अनुमति प्राप्त होना शेष है आयुर्वेद संकाय की निश्चय संख्या 2 (ग) दिनांक 21-22 मार्च, 1974 के अनुसार सम्बद्ध महाविद्यालयों में न्यूनतम 100 रोगी शैयाओं के आतुरालय वांछनीय हैं। आयुर्वेद कालेज, सीकर के छात्रों के लिये उपरिलिखित स्वीकृति शैयाओं की संख्या कुल मिलाकर 95 हो जाती है, अतः उन्हें सम्प्रति इस निर्देश के साथ इन्टर्नशिप के लिये स्वीकृति देने की संस्तुति की जाती है कि वे यथा साध्य शीघ्र 5 शैयाएँ चिकित्सालय में और बढ़ाने की व्यवस्था कर लें।

(4) समिति ने आयुर्वेद संकाय की निश्चय संख्या 13 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री अशोक कुमार शर्मा, अध्यक्ष, छात्र संघ एवं महासचिव, छात्र संघ, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के पत्र दिनांक 11/1/83 में उल्लिखित प्रस्ताव संख्या 1 व 6 पर विचार विमर्श किया।

समिति ने संस्तुति की कि (1) जहाँ तक जानकारी है टी.डी.सी. जीव विज्ञान एवं संस्कृत सहित प्रवेश योग्यता का प्रावधान देश के किसी भी विश्व-विद्यालय में नहीं है केवल उत्तर प्रदेश में हाईस्कूल एवं इण्टरमीडियेट बोर्ड की इन्टरमीडियेट परीक्षा की ग्रुप (जीव विज्ञान एवं वैकल्पिक संस्कृत सहित) जो कि टी०डी०सी० प्रथम वर्ष के समकक्ष मान्य है प्रवेशार्थ अनुमत है। उनमें भी केन्द्रीय भारतीय चिकित्सा परिषद् द्वारा प्रतिबन्धित कर दिया गया है कि प्री-आयुर्वेद द्वितीय वर्ष के प्रारम्भिक पदार्थ विज्ञान विषय जिनसे तथा कथित प्रवेशार्थी वंचित हैं उन्हें तब तक व्यावसायिक प्रथम वर्ष पाठ्यक्रम में उत्तीर्ण नहीं माना जायेगा जब तक कि वे उन विषयों की परीक्षा आयुर्वेदाचार्य प्रथम वर्ष के विषयों के साथ समुत्तीर्ण नहीं कर लेते हैं।

2 आयुर्वेद कालेज में प्रवेश के लिये पी०एम०टी० की परम्परा थी सर्व प्रथम उत्तर प्रदेश में ही मेडिकल कालेज के प्रवेशार्थियों के साथ साथ उनसे प्राथमिकता का विकल्प मांगते हुये तथा पात्रता के अनुसार निर्णय को शासन के हाथों में रखते हुये किया गया है, जिसके दो परिणाम सामने आये हैं।

(क) सर्व प्रथम प्राथमिकता मेडिकल की रहने के कारण वरिष्ठतर अभ्यर्थी मेडिकल कालेजों के लिये चयनित हो जाते हैं। तथा बचे कुचे

निम्नतर वरीय अभ्यायी आयुर्वेद कालेजों के लिये मिल जाते हैं ।

(ख) आयुर्वेद कालेजों में जिनमें से प्रत्येक में न्यूनतम प्रवेश स्थान 50 हैं, उनमें कहीं पर 8 कहीं पर 18 और कहीं पर 36 छात्र अभ्यायियों का प्रवेश हो पाता है, जिससे आयुर्वेद कालेजों की क्षमता के अनुसार उनके पास कार्य नहीं रहता है जिसके गंभीर परिणाम आयुर्वेद कालेजों के शिक्षक वर्ग तथा आयुर्वेद जगत के सामने आने की संभावनाएं हैं ।

(ग) पी० एम० टी० के केन्द्रों की बात तो अप्रस्तुत है । तथापि यह स्पष्ट है कि आयुर्वेद एवं चिकित्सा प्रान्तीय विषय हैं और स्नातक स्तर प्रवेश के लिये प्रत्येक राज्य में उस राज्य के डोमी साइल की शर्त रहती है । अतः इन प्रान्तों में उसके केन्द्र रखने की बात आधार हीन है ।

उपर्युक्त किसी भी दृष्टि कोण से टी० डी० सी० के प्रथम वर्ष उत्तीर्णता तथा अन्य प्रावधान व्यावसायिक पाठ्यक्रम में प्रवेश के लिये संस्तुत करने का औचित्य प्रतीत नहीं होता है । वर्तमान में जो व्यवस्था प्रवेशार्थ विद्यमान है, वह पूर्व सुविचरित सुउपयुक्त है अतः यथावत उसे ही चालू रखा जाना उचित है । प्रस्ताव संख्या 6 पर विचार किया, प्रस्ताव की भावना को ध्यान में रखते हुये यह उचित होगा कि प्रश्न पत्र की भाषा अति सरल संस्कृत होवे तथा परीक्षकों को यह भी स्पष्ट निर्देश दिये जाय । करे कि वे कठिन शब्दों के स्थान पर प्रचलित और सुगोघ शब्दावली का प्रयोग करें तथा लम्बे समासों तथा मन्त्रियों का प्रयोग न करें । जिनसे छात्र प्रश्न के आशय को सरलता पूर्वक समझ सके । इस व्यवस्था से सहज ही प्रस्तावक की भावना की पूर्ति भी हो जायेगी ।

5) समिति ने आयुर्वेद संकाय की निश्चय मंख्या 14 दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री श्रीकृष्ण शर्मा, जयपुर के प्रस्ताव " स्नातकोत्तर कक्षाओं में प्रवेश के लिये कम से कम एक वर्षीय प्री-आयुर्वेद पास व्यक्ति ही पात्र हो" पर विचार विमर्श किया ।

समिति ने संस्तुति कि की संदर्भित प्रस्ताव अनावश्यक है क्योंकि, स्नातक पाठ्यक्रम की प्रवेश योग्यता न्यूनतम एक वर्षीय प्री-आयुर्वेद ही सर्वत्र है । अथवा कहीं पर उससे अधिक है अतः प्रस्तावक के आशय में कहीं पर बाधा प्रतीत नहीं होती है ।

(6) समिति ने आयुर्वेद संकाय की निश्चय मंख्या 15 दिनांक 11/12 जनवरी, 1982 के संदर्भ में श्री पूर्णमल मिश्र, के प्रस्ताव "जिस प्रकार मेडि-

कल संकाय में एम०डी० या एम०एस० में प्रवेश लेने वाले 5 वर्ष के चिकित्सानुभव वाले व्यक्तियों को 2 वर्ष में पाठ्यक्रम पूरा करने का प्रावधान है उसी प्रकार आयुर्वेद संकाय में भी 5 वर्ष के चिकित्सानुभव वाले व्यक्ति को एक वर्ष के हाऊस जोब से मुक्त रखते हुये प्रवेश देकर 2 वर्ष बाद एम० डी० (वाचस्पति) फाइनल परीक्षा देने का अधिकार दिया जाना चाहिये।" पर विचार विमर्श किया।

समिति ने संस्तुति की कि वर्तमान में पाठ्यक्रम के प्रति वर्ष के क्रम को देखते हुये उक्त वांछित संशोधन व्यावहारिक नहीं होगा इस विषय में यदि अध्ययन मण्डल आवश्यक समझे तो मेडीकल कालेज की व्यवस्थाओं को सुझाव देने के लिये एक उपसमिति नियुक्त कर दें। जो अपनी संस्तुति मण्डल को दें और मण्डल की संस्तुति के अनुसार विश्वविद्यालय अग्रिम कार्यवाही हेतु उसे भारतीय चिकित्सा केन्द्रीय परिषद के, संदर्भित करें।

(7) समिति ने आयुर्वेद संकाय के निश्चय संख्या 16 दिनांक 11/12 जनवरी, 83 के संदर्भ में श्री वेद प्रकाश गर्मा, जयपुर के प्रस्ताव संख्या 4, "आयुर्वेद स्नातकोत्तर उपाधि पाठ्यक्रम में परीक्षा परिणाम में प्राप्तांकों का उल्लेख नहीं किया जाकर उत्तीर्ण अथवा अनूतीर्ण होने का उल्लेख मात्र रहे। सम्बन्धित नियम 43-एच तथा 43-आई में तदनुसार उचित संशोधित किया जावे" पर विचार विमर्श किया।

समिति ने संस्तुति की कि इसे स्वीकार करने में कोई आपत्ति नहीं है।

(8) समिति ने आयुर्वेद अध्ययन मण्डल की संस्तुति संख्या 6 दिनांक 5/6 मार्च, 1982 के द्वारा आयुर्वेद संकाय की संस्तुति संख्या 11(ब) दिनांक 22/23 सितम्बर, 1981 के द्वारा श्री वेद प्रकाश गर्मा के प्रस्ताव "आयुर्वेद संकाय द्वारा क्लीनिकल एवं नान क्लीनिकल विभागों का स्पष्ट निर्धारण किया जावे और तदनुसार व्यवस्था हेतु सम्बद्ध महाविद्यालयों को निर्देश दिये जावें" पर विचार विमर्श किया।

समिति ने संस्तुति की कि क्लीनिकल एवं नान क्लीनिकल विषय कौन-कौन हैं तथापि स्पष्टीकरण के लिये उनका पुनः उल्लेख किया जा सकता है जैसे 1. रोग विज्ञान एवं विकृति विज्ञान 2. काय चिकित्सा 3. प्रसूति स्त्री रोग एवं कौमार मृत्य 4. शालाक्य तंत्र 5. अगदतंत्र एवं व्यवहारायुर्वेद स्पष्टतः क्लीनिकल हैं। जेष द्रव्यगुण, रसजात्य कल्पना आदि चिकित्सकीय परीक्षण के साथ अध्याय है जैसा कि प्रायः स्नातकोत्तर में होता है, उन्हें भी क्लीनिकल के अन्तर्गत किया जा सकता है किन्तु स्नातक पाठ्यक्रम के

लिये पूर्वतः 6 विषय ही क्लिनिकल रहेंगे ।

(9). समिति ने आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 15 दिनांक 5/6 मार्च, 1982 के द्वारा आयुर्वेद वाचस्पति (एम० डी० आयुर्वेद) राष्ट्रीय आयुर्वेद संस्थान, जयपुर के अध्यक्षों द्वारा प्राप्त मांग पत्र में वर्णित मांग संख्या 2, 3 एवं 5 पर विचार विमर्श किया ।

समिति ने संस्तुति की कि जब तक प्रस्तुत विषय का स्नातकोत्तर पाठ्यक्रम व्यवहार में नहीं आता है तब तक अनुभूत कठिनाइयों एवं संशोधन का विचार अप्रस्तुत अप्रासंगिक प्रतीत होता है । यह निर्णय मांग संख्या 2-3 एवं 5 पर पूर्णतः लागू होता है ।

(10): समिति ने आयुर्वेद संकाय की निश्चय संख्या 16, दिनांक 11/12 जनवरी, 1983 के संदर्भ में श्री वेद प्रकाश शर्मा के प्रस्ताव संख्या 3 "राजस्थान विश्वविद्यालय द्वारा सम्बद्ध आयुर्वेद महाविद्यालय के लिये निर्धारित न्यूनतम आवश्यकताओं का सुनिश्चित रूप से पुर्ननिर्धारण तत्तद् विद्यालयों को सभी अनुसंधान एवं शिक्षण समितियों द्वारा किया जावे ।" पर विचार विमर्श किया ।

समिति ने संस्तुति की कि पूर्व निर्धारित न्यूनतम आवश्यकताओं की पूर्ति तथा न्यूनाधिकता के विषय में किसी भी विभाग एवं विद्यालय की ओर से कोई प्रस्तुत प्राप्त नहीं है अतः इस सम्बन्ध में कोई विचार करना सम्भव नहीं है ।

अन्त में संयोजक को धन्यवाद के साथ सभा विसर्जित हुई है ।

ह०/-

(बदरी नारायण शर्मा)

संयोजक

MINUTES OF THE BOARD OF STUDIES IN
DRAWING & PAINTING HELD ON 28TH
JUNE, 83 AT 11.03 AM IN THE VICE-
CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS,
JAIPUR

Present :

1. Shri C. S. Mehta - Convener.
2. Shri Ram Jaiswal.
3. Shri Banshi Lal sharma.
4. Sh. Ramesh Pandya.

1. Under section 34 (4) (IV) of the University Act., the Board elected Shri Ram Jaiswal as member other than the convener of the Board to serve on the committee for selection of examiners in the subject for the year 1983-84.
2. With reference to Academic Council Res. No. 26 dated 24,25 May, 1983, the Board resolved to recommend that the courses of study of IIyr. and III year will remain as they are and submission of work at III year will be of 40 marks instead of 20 but the head of the department will award the marks out of 20 for the submission of the IIyear and the rest of 20 marks of submission of III yr.
3. The Board also clarified that the students will be required to cover the course of existing second year in Secondyear and Final year in third year, but the examinations in all papers including practicals will be held in Final year T.D.C. based on two years courses of study.
4. the Board with the permission to the Chair also resolved that the department of Drawing & painting be named as Department of Fine Arts and the Board of studies shall also be renamed as Board of studies in Fine Arts.
5. Non-collegiate students be required to attend two weeks camp which shall be organised by the post-graduate department of painting, before appearing for

the Final year Examination -
Fee/
Remuneration/in
Jan/Feb

6. The Board felt the need for introduction of four new subjects under the Board of Fine Arts :
(1) History of Arts (2) Elementary Esthetics and Arts criticism (3) print making (4) study of tradition Indian Painting at the under graduate level. The Board has finalised the basic approach regarding the aforesaid - subjects but the detailed syllabi shall be finalised in the next meeting which should be held at least two day's before the Faculty meeting.
The meeting ended with a vote of thanks to the Chair.

Sd. C. S. Mehta
CONVENER

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN CHEMISTRY HELD ON THE
28TH JUNE, 1983 AT 11.00 A.M. IN THE
VICE-CHANCELLOR'S SECRETARIAT,
JAIPUR.

PRESENT

1. Prof. K. C. Joshi (Convener)
2. Prof. Y. K. Gupta
3. Dr. V. Iyer
4. Sh. V. P. Lavania
5. Prof. J. N. Gaur
6. Dr. A. I. P. Sinha

1. Under clause (iv) of sub-section (4) of Section 34 of the University Act, the Board elected Shri V. P. Lavania, Principal, Dungar College, Bikaner as member other than the Convener of the Board of Studies to serve on the Committee for selection of examiners for the year 1983-84.

2. The Board noted the Academic Council Res. No. 26 dated 24/25 May, 1983 and resolved to recommend the courses of study for the Final Year T. D. C. Pass Course Exam. of 1986 as under :—

I. At present there are six papers viz. three papers in II Year and three papers in Final Year T. D. C. All the six papers be included in the syllabus. If it is not possible to have six papers in Final Year T. D. C. only three papers viz. Paper-I-Inorganic

Chemistry, Paper-II-Organic Chemistry and Paper-III Physical Chemistry be prescribed Topics given under the aforesaid papers in the II Year T. D. C. may be treated as Section A and Topics given under the aforesaid papers in Final Year T. D. C. may be treated as Section-B. Topics given under Section-A in each of the aforesaid three papers be covered in II Year T. D. C. and Topics given under Section B of each paper be covered in the Final Year T. D. C. Similarly in practicals there shall be only one Practical covering all the topics prescribed for the Second Year T. D. C. as Section-A and Topics Prescribed for Final Year T. D. C. as Section B. Each Theory paper be of 100 marks and 3 hours duration and Practical 100 marks of 5 hours duration. A candidate shall be required to attempt 3 questions from each section in each paper.

3. The Board considered the item of scrutinising and revising the panel of examiners and authorised the Convener to send a letter to all the Principals of the affiliated colleges to get up-dated lists of teachers with their teaching experience and speciality in the papers etc. and submit the revised panel at the next meeting of the Board of Studies likely to be in August/September, 1983. The Board however clarified that all external persons serving in the University Department, affiliated Post-Graduate colleges affiliated to the various Universities be considered for appointment as external examiners.
4. The Board considered a proposal for introducing Analytical Chemistry at the M. Sc. Final Exami-

nation of 1984 and resolved that the same syllabus as has been prescribed for the M. Sc. Pre. Exam. of 1984 and M. Sc. Final Exam. of 1985 be adopted. The Board also authorised the Convener to look into the syllabus and recommend necessary changes if any, for consideration of the Faculty.

The meeting ended with a vote of thanks to the Chair.

Sd/- K. C. Joshi
CONVENER.

MINUTES OF THE MEETING OF THE B. O. S.
IN PHYSICS HELD ON 27 TH JUNE, 1983
AT 11-00 A. M. IN THE VICE-
CHANCELLOR'S SECRETARIAT,
JAIPUR.

PRESENT

1. Dr. N. L. Varma (Convener)
2. Dr. D. P. Goyal
3. Sh. H. C. Singhvi
4. Sh. H. B. Saxena

1. The Board postponed election of one member other than the Convener of B. O. S. to serve on the Committee for selection of Examiners in the subject for the year in view of the fact that there are two vacancies on the Board and Dr. N. L. Varma is also to retire on 31st Aug., 1983 The Board further desired that the said election be held only after all the vacancies on the Board are filled up by the Faculty.
2. The Board considered the ACC resolution No. 26 dated 24-25 May, 1983 duly approved by the Syndicate and resolved to recommend that :—
 - (a) there shall be an examination at the Final Year T. D. C. Exam. of 1986 based on two years study in the following papers :—

Paper—I Mechanics, Kinetic Theory and Bulk Properties of Matter

Paper — II Thermodynamics & Optics

Paper — III Electricity & Electronics

Paper – IV Modern Physics

The detailed syllabus is given in as Appendix-I

N.B. Students will cover the topics mentioned in Papers I & II in II Year T. D. C. and Papers III & IV in Final Year T. D. C. Only twenty-nine experiments have been prescribed in practicals as outlined in Appendix-II and a student shall be required to perform any twelve experiments out of first 14 (one to fourteen) in II Year T. D. C. and any twelve out of remaining 15 i. e. from 15 to 29 in Final Year T. D. C.

N.B. The Board, However, feels that the said resolution of the Academic Council providing an examination at the end of Final Year based on the courses of study for II & III Years would be unnecessary duplication and rather heavy examination work for students. The latter may possibly lead to a senior unrest amongst the students. Keeping this in view, the Board is of the opinion that the examination at the end of the Final Year be held on the basis of the courses of study prescribed for the third year only.

3. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers received from the Univ. teaching depts, Univ. Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners and prepared a complete panel of examiners in terms of clause 2 (a) of Studies 25 of the University Hand Book Pr. II giving full names and correct addresses of examiners in adequate number so that examiners from outside the

panel may not have to be taken and authorised the Convener to finalize the panel and deliver it to University office immediately.

4. The Board noted that Dr. Varma is due to retire on 31 st of August, 1983. The Board recorded its appreciation for the valuable services rendered by Dr. Varma in two years.

The meeting ended with a vote of thanks to the Chair.

S/d. Dr N. L. Verma
CONVENER

APPENDIX-I

Physics

Min. pass marks 108

Max marks 300

Paper I 3 hours duratng 75 marks

paper II 3 hours duratng 75 marks

paper III 3 hours duratng 75 marks

Paper IV 3 hours duratng 75 marks

Syllabus :--

N. B. :- Ten questions will be set and a student will be required to attempt five questions in all with atleast two questions from each section.

Paper I-Machanics, Kinetie theory and Bulk Properties of matter.

SECTION--A

1. Physical laws and frames of refereuce :

This cartesian coordinate ssstem, Position, Displace ment Velocity, Adceleration. Translormation of these quantities to system under uniform relative motion, Inertial frames of reference, Gallilean transformation, Transformation of displacement under rotation of cartesian coordinates.

2. Non-relativistic dynamics of a particle.

Collision of two bodies : prof of the law of conservation of momentum using Gallilean invariance and law of conservation of energy, Rotaiting coordinate systems position Velocity and Acceleration, Psudo forces, Electro-static force on a charged particle, Magnetic force on a moving charge, Motion of charged particle in uniform electric and magnetic fields, Principle of a cyclotron.

3. Dynamic of system of particles and rigid bodies and Conservation laws.

The centre of mass : Motion of centre mass, Two particle system any reduced mass, Angular momentum of system of particles, conservation of momentum, angular momen-

tum and energy of an isolated system, moment of inertia of a disc spherical shell and a sphere, Equation of motion of a rigid body.

4. Oscillatory motion ;

Small oscillation in a potential well. The linear harmonic oscillation, energy, phase, Vibration of diatomic molecules The damped oscillator, The forced oscillator with damping Ex-change of energy under various phase conditions, Resonance. The LCR circuit, only as an example, Resonance Curves The Q factor of the oscillator.

SECTION B

5. Wave motion ;

Mathematical description of wave propagation, Differential equation, Elastic Waves in a solid, pressure wave in a gas column, Transvers waves in a string.

Energy and momentum in a wave motion : The propagation of waves in three, dimensions, Group and wave velocity.

6. Elastic properties of matter :

Elasticity, Young's modulus, Bulk Modulus, Modulus of rigidity and Poisson's ratio, and their relationship, Bending of a beam, Torsion of a cylinder.

7. Kinetic theory of gases :

Concept of mean free path Elementary derivation of coefficient of viscosity, thermal conductivity and diffusion.

Maxwellian distribution of velocities. (no derivation), Degrees of freedom, Law of equipartition of energy Classical theory of specific heat of gases.

8. Statistical Mechanics :

phase space, Microstates and Macrostates, Thermodynamic probability, Entropy and probability, Distinguishing features of Maxwell Boltzman. Bose Einstein and Fermi Dirac statistics Derivation of Maxwell-Boltzman distribution and its application in monoatomic ideal gas.

Paper II—Thermodynamics and Optics :

N.B. :—Ten questions will be set and a student will be required to attempt five questions in all with atleast two questions from each section.

SECTION--A

1. The second law of thermodynamics :

Heat engines and efficiency, Reversible and irreversible processes with examples. The Carnot cycle. Carne'ts Theorem. The Second Law, entropy, Principles of increase of entropy, Calculation of entropy in simple cases.

Temperature scales. Thermodynamic scale as an absolute scale and its identity with perfect gas scale.

2. Thermodynamic relations :—

Change of phase and Clausius—Clapeyron's equation, Thermodynamic potentials Enthalpy, Helmholtz and Gibbs, functions. Maxwell's relations and their applications. The Joule Thomson expansion, Calculation of J.T. Coefficient for a Vander Waals gas.

3. Thermal radiation :

Energy density. Emissive power and spectral emissive power, Radiation in equilibrium with matter and back body fedration, Pressure of radiation, Stefan's Law. The classical distribution law of Rayleigh—Jean's, Wien's law derived from the thermodynamics; Planc'k hypothesis, The oscillator as a model for matter interacting with radiation Average energy of a Blanck oecillator, Plancks' radiation law.

4. Liquification of Gases :

Critical temperature : Critical constants for a vander Waal's gas, Joule—Thomson process and regenerative cooling, (cooling) by adiabatic demagnetisation.

5. Thermal and mechanical properties of solids :

Interatomic forces and potential energy curve in crystal-line media. Types of bonds in Crystals, Crystal binding energy. Thermal vibrations of atoms of solid (only, harmonic vibration of diatomic molecules to be discussed as an example), Heat capacity. Dulong and Petit's law and its failure, the Einstein model for specific heat of a solid.

SECTION—B

6. Electromagnetic waves :

Divergence, Curl and Laplacian operators, Maxwells] equations, Wave equation, and a solution for plane electromagnetic waves in a non-conducting medium, Transverse nature, Velocity of propagation: Refractive index of a medium, Energy and momentum of an electromagnetic wave, Poynting vector.

7. Interference of light :

Interference of waves produced by two synchronous sources. The necessity for coherence, Lyods mirror and biprism experiments, Interference with an extended source. Newton's rin's Colour of thin films, Michelson's interferometer.

8. Diffraction :

Fresnel Diffraction : Variation of Intensity along axis of a circular aperture and disc, Zone plate, Diffraction at a stra. ightedge.

Fraunhoffer Diffraction : Diffraction at a single slit. Circular aperture, Double slit, Resolving power of a telescope and Microscope. The plane transmission grating, Resolving power of grating and prism.

9. Polarization :

Plane, circular and elliptical polarisation, Half wave

and quarter wave plates, Production and analysis of circularly and elliptically polarized light, Optically active media, Rotation of Plane of polarization Polarimeters (Half shade and biquartz).

Paper III—Electricity and Electronics

Note :—Six Questions to be attempted, 3 from 'A' and 3 from 'B'.

SECTION 'A'

1. Transient Current Ballistic Galvanometer :

Description, Distinction from dead-beat galvanometers. Expression for charge passing through a moving coil ballistic galvanometer.

Damping, logarithmic decrement, over damping, Critical damping and under namping, critical damping resistance.

Action of an inductance and capacity in a DC circuit; Growth and decay of current in circuits containing (i) inductance and resistance, (ii) capacity and resistance; Behaviour of a circuit containing inductance, capacity and resistance.

Applications of a Ballistic Galvanometer—High resistance by leakage method; measurement of strong magnetic field by search coil; inductance by Rayleigh's method.

2. A.C. Circuits

Behaviour of L R., C.R. and L.C.R. circuits; series and parallel resonance; Band width and Q of circuits.

3. Circuit Analysis :

Kirchhoff's, laws, Reciprocity, Thevinin-s Norton's and Maximum Power Transfer theorems: T and π equivalent circuits, Four terminal network; Output and Input impedances. Basic filter circuits.

SECTION 'B'

4. Conduction in Solids and Semiconductor diode :

Free electron model; Lorentz Drude Theory Conduction and valence, band; Distinction between conductors, insulators and semiconductors; Intrinsic and Extrinsic semiconductors; N and P type; P-N junction; Characteristics under forward and reverse bias conditions; Avalanche break down and Zener diode .

Transistors :

N—P—N and P—N—P transistors, Transistor Operation; Common emitter, base and collector characteristics; h - para - meters and principle of transistor as an amplifier.

5. Electron Emission :

Electron emission : Thermionic emission and derivation of Richardson's equation; Space charge and Child's Law.

Rectifiers :

Half wave and full wave rectifiers; Ripple factor; filters C. & L. Input; Elementary idea of voltage stabilization (V-R tubes) and metal rectifiers.

6. Amplifiers :

Types of amplifiers (A, B and C); Cascade amplifiers, Coupling methods; R-C coupled tube amplifier; Its frequency response, Effects of increasing the number of stages.

Oscillators :

Types of oscillators; Conditions for maintained oscillations. Barkhausen criterion, Hartley oscillator.

Paper IV—(Modern Physics) :

Note : 3 Questions to be attempted in each Section.

SECTION 'A'

1. Special Theory of Relativity :

Michelson—Morley experiment; Principle of special theory of relativity: Lorentz transformation : Time dilation; Example of life time of unstable particles; Lorentz contraction; Mass variation: Transformation of energy and mass; Four-vectors and relativistic kinematics.

2. Wave Mechanics :

de-Broglie waves; Electron and neutron diffraction experiments; Heisenberg's uncertainty principle with illustrative example; Schrodinger's equation for a single particle; Solution of Schrodinger equation for a square well potential and barrier penetration; Tunnel effect.

3. X-Rays :

Characteristic X-rays and Mosely Law; Scattering of X-rays by loosely bound electrons (Compton effect); Thomson scattering and polarisation of X-rays; Diffraction of X-rays; Bragg's Law; Determination of X-ray wave length.

Crystal structure; Types of lattices (classification only) Miller indices; Bremsstrahlung and continuous X-rays.

Laser :

Spontaneous and induced emission of light Elementary description of Laser.

SECTION 'B'

Particle Accelerators :

Linear accelerator. Cyclotron. Betatron, Electron synchrotron and Proton synchrotron.

Particle and Radiation Detectors :

Ionisation chamber; Proportional and GM counters Cloud chamber and Bubble chamber.

5. Properties of Nucleus :

Mass defect and packing fraction; Binding-energy of nucleus; Scattering of a particles (Rutherford's formula); Size of the nucleus, α , β and γ decay processes; Range energy relationship of α -particles. β -ray spectrum and its qualitative explanation; Passage of γ -rays through matter, qualitative explanation in terms of photo electric effect, Compton effect and pair production.

6. Nuclear Transformation :

Typical nuclear reactions due to protons; neutrons; α particles.

Liquid drop model of the nucleus. Elements of fission and fission process; Description of a nuclear reactor. Informative count of elementary particles and their classification.

N.B. Students shall cover topics given under paper I & II in second year T.D.C. and paper III and IV in final year.

Appendix II

Max. Marks—100.

Min. Pass Marks=36

N.B. A student shall be required to perform any 12 experiments out of first 14 in IInd year T.D.C. and remaining 12 experiments of final year T.D.C.

List of Experiments

1. To determine 'Y' by bending of beams.
2. Determination of Young's Modulus, Modulus of Rigidity Poisson's ratio by Searle's apparatus.
3. 'J' by Callendar and Barne's Method.
4. To determine the dispersive power of the material of the prism with the help of a spectrometer.
5. To determine wave length of light by plane diffraction grating.
6. To determine the resolving power of a grating.
7. Determination of wave length of light by Newton's rings.

8. To determine wave length of light using biprism.
9. To determine the specific rotation of cane-sugar solution's using a polarimeter.
10. To convert a galvanometer into an ammeter of a given range and to calibrate the same.
11. To convert a galvanometer into an voltmeter of a given range and to calibrate the same.
12. To find the resistance by Carey-Foster's bridge.
13. To determine the thermo E.M.F. of a thermocouple and then to draw a graph between the thermo-e.m.f. generated and temperature of the hot junction keeping the temperature of the cold junction constant.
14. 'e/m' of electrons by Thomson's method or Helical method.
15. To determine the constant of Ballistic Galvanometer.
16. To determine the intensity of magnetic field using search coil and ballistic galvanometer.
17. To determine high resistance by the method of leakage.

OR

- To measure the energy dissipated in changing a capacitor.
18. To compare the capacities of two condensers by Desauty's method and determination of dielectric constant of transformer oil.
 19. To determine the inductance of a coil by Anderson's method or Rayleigh's method.
 20. Study of resonance in series and parallel L-C-R circuits.
 21. Study of Phase relationship in an L-C, L-R, C-R and L-C-R circuit.
 22. Measurement of power factor in an L-C-R circuit.
 23. Measurement of peak and average voltage in a varying emf circuit.

24. To determine the band gap in a semiconductor using a junction diode.
 25. Study of the R-C circuit with diode as an integrating system with (i) alternating, (ii) sinusoidal input.
 26. To plot the plate characteristics of a tetrode and calculate its negative resistance.
 27. To draw the characteristics of a pentode and calculate its g_m , μ and r_p .
 28. To study the static characteristics of a transistor :
 - (i) To plot common base input-output characteristics and determine α .
 - (ii) To plot common emitter input-output characteristics and determine β .
 29. Study a single R-C valve amplifier. Plot frequency response and study variation R-L and C-C.
-

MINUTES OF THE MEETING OF THE BOARD OF STUDIES IN ECONOMIC ADMINISTRATION AND FINANCIAL MANAGEMENT HELD IN THE VICE-CHANCELLOR'S SECRETARIAT (NEW BUILDING), UNIVERSITY CAMPUS, JAIPUR, ON SEPTEMBER 30, 1982 AND OCTOBER, 1, 1982.

PRESENT.

1. Dr. Om Prakash (Convener) (Both days)
2. Shri K.B.L. Mathur (Both days)
3. Dr. N.K. Sharma (Both days)
4. Shri R S. Agarwal (Both days)
5. Shri K.K. Mathrishi (Both days)
6. Dr. M.D. Sharma (on September 30 only)
7. Shri M.L. Verma (Both days)

Proceedings :

(1) Under clause, (iv) of sub-section (4) of Section 34 of the University Act, Dr. N.K. Sharma was elected as a member, other than the Convener of the Board of studies to serve on the Committee for selection of examiners in the subject for the year.

(2) The following sub-committee was appointed to scrutinize the statement of qualifications and teaching experience etc. of the teacher belonging to the University Teaching Department/University Colleges/affiliated Institutions and other Universities :—

1. Dr. N.K. Sharma (Convener)

2. Shri R.S. Agarwal
3. Shri M.L. Verma
4. Shri K.B.L. Mathur

It was resolved that (a) the University office may send letters to all the Principles of Colleges to collect upto date and authentic information and (b) the sub-committee may submit the revised panal of examiners to the Convener of the Board of Studies who may take further action thereon.

(3) It was resolved to reiterate that the Convener and other members of the Committee for the selection of Examiners be entitled to draw remuneration (Subject to the same ceiling as is applicable to other teachers of thc subject) for examinerships connected with this Board of Studies.

(4) The reports of examiners and question papers for the examinations of 1982 were not placed before the Board and, as such, no comments were offered thereon.

(5) It was resolved that the courses for the M. Com. (Previous) examination of 1985 and M.Com. (Final) Examination of 1986 in Economic Administration & Financial Management, cooperation be repeated subject to the following recommendations :—

(a) The paper on Book-keeping already framed by this Board for B.A. and B.Sc. Students joining M Com. in this department be introduced during the session 1983-84 and,

(b) Viva-voce examination be continued in view of the vital importance of developing communication skill in the subject.

(6) Resolved that the courses for the following two Diploma Course examination of 1985 be repeated subject to

the stipulation that Viva-Voce examination be continued as an integral part of the assessment of monographs required to be submitted by all the candidates :—

(a) P.G. Diploma in Banking and Finance (Started in 1970) and :

(b) P.G. Diploma in Cooperation (Started in 1972)

(7) Resolved to recommend that the courses for the following new job-oriented courses (Started in 1982) be repeated for the examinations of 1984 subject to the stipulation that Viva-Voce examination should be continued as an integral part of the assessment of study paper based on Six weeks practical training compulsarily required to be undertaken by each candidate :—

(a) P.G. Diploma in Management of small Scale and Agro Industries.

(b) P.G. Diploma in Project planning and Infrastructure Management.

(c) P. G. Diploma in Development and Investment Banking.

(8) The Board considered letter dated September 23, 1982 from Shri Harak Chand Rara (Appendix 'A') suggesting the introduction of a new scheme of B. Com. courses with effect from the examinations of 1985. The idea of having three compulsory and some optional papers with in each of the three subjects (Economic Administration & Financial Management so far as this Board is concerned)—instead of having some optional groups in addition to three compulsory subjects was endorsed by the Board in princi-

ple. It was suggested, at the operational level, that there could be six papers (two of each subject) at the first year, six papers (two of each subject) at second year, and nine papers (three of each subject) at the third year examination (thus, in all, seven papers for each subject, including three compulsory papers). Outlining the following papers, It was suggested that another meeting of the Board of studies might be convened for drawing up detailed courses :—

(A) Compulsory Papers (Three) :

1. Indian Economy
2. Principles of Economics
3. Money, Banking and Public Finance.

(B) Optional Papers (Four) :

4. International Finance
5. Planning and Economic Development
6. Law and Practice of Banking
7. Cooperation
8. Transport
9. Trade
10. Public Enterprise

(C) Honours Papers (Two) :

11. Financial Management
12. Foreign Exchange

N. B. If account is taken of the three erstwhile compulsory papers at the first year stage (General Hindi, General English and one more), there may be only three Optional papers (instead of four suggested above) in addition to three compulsory papers in each of the three subjects of the Commerce Faculty.

(9) In case the scheme suggested by Mr. Rara does not materialise the two Honours Papers (in addition to usual Paper of B. Com. (Pass Course) should still be introduced. Moreover, Trade and Transport may be introduced as additional optional papers in the subject for the B. Com. (Pass) course. It was resolved that the Convener be authorised to place detailed courses before concerned University Bodies directly and to take further necessary action both with regard to, Honours papers and the additional optionals.

(10) Resolved to recommend that (a) History of Indian Culture and Civilisation (HICC) be dropped (in July 1983) from the compulsory groups of three papers to be offered at the B.Com. First year examination; and

(b) Rural Development (E.A.F.M. Group) be introduced as an alternative paper in the compulsory group of three papers to be offered at the B.Com First year examination (and that the convener might take further necessary action in this regard).

(11) Subject to the abovementioned resolutions, the courses of First year, Second year and Third year of the T.D.C. (Pass) course examinations of 1985 might be repeated.

(12) Resolved to recommend that the courses for the Pre-University examination (P.U.C.) of 1985 might be repeated.

(13) The Following additional Books were recommended :—

- (i) एन० डी० अग्रवाल, आर्थिक विश्लेषण, नैलाग बुक डिपो, जयपुर ।
(M.Com Economic Analysis).
- (ii) एम० डी० अग्रवाल, प्रबन्ध लेखांकन, महावीर बुक डिपो, देहली ।

(M.Com. Management & Management Accountancy)

(iii) एम० आर० अग्रवाल, प्रबन्ध लेखांकन

National, Delhi (M.Com. Management & Management Accountancy)

(iv) Robertson & Dennison उद्योग का नियंत्रण
translated by Laxmi Narayan Nathuramka/
Nurnabi Abbasi, Rajasthan Hindi granth
Academy, Jaipur (M.Com. essays & Comments)

(14) The meeting ended with a vote of thanks to the chair.

Sd/—

(Om Prakash)

Convener.

APPENDIX-A

(Ref. Res. 8-E.A.F.M. Board)

संयोजक जी,
 आर्थिक प्रशासन अध्ययन मण्डल,
 राजस्थान विश्वविद्यालय, जयपुर ।

प्रिय महाशय,

जैसा कि आपको विदित ही है कि वाणिज्य संकाय द्वारा बी०काम० (पास) पाठ्यक्रम में संशोधन हेतु चुनाव देने के लिए गठित समिति की जुलाई में हुई पहली बैठक में अन्य बातों के अलावा यह भी आम सहमति थी कि एकाउन्टेन्सी विजनिंग एडमिनिस्ट्रेशन तथा इकोनामिक एडमिनिस्ट्रेशन विषयों में से प्रत्येक में तीन अनिवार्य एवं कुछ ऐच्छिक पत्र हो जिनमें से परीक्षार्थी को दो चयन करने का अधिकार हो । परीक्षार्थियों को द्वितीय वर्ष और तृतीय वर्ष परीक्षाओं हेतु जो एक अतिरिक्त विषय का चयन करना होता है उसे समाप्त किया जाये ।

आपसे अनुरोध है कि इस सम्बन्ध में आपके अध्ययन मण्डल द्वारा यह अनुज्ञा की जावे कि आपके विषय में तीन अनिवार्य पत्र कौन-कौन से हों और ऐच्छिक पत्र कौन-कौन से हों । साथ में प्रथम वर्ष के लिए जिस पत्र की अनुज्ञा की जावे उसके (Syllabus) के सम्बन्ध में भी अनुज्ञा कर दी जावे ताकि यह परिवर्तन 1985 की परीक्षा से ही लागू हो सके और एक वर्ष की अनावश्यक देरी न हो ।

भवदीय

ह०/-

(हरक चन्द राणा)

23/9/82

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN ENGINEERING AND TECHNOLOGY
HELD ON 17TH MARCH, 1983 AT 12.00 NOON
IN THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS. JAIPUR.

Present :

- | | | |
|----|----------------------|---------------------|
| 1 | Dr. R.D. Verma | (Convener) |
| 2. | Dr. C.S. Upadhyay | |
| 3. | Dr. T.V. Rajan | |
| 4. | Shri C.L. Arora | |
| 5. | Dr. B.C.L. Agarwal | |
| 6. | Dr. M.B. Mawal | |
| 7. | Dr. R.S. Verma | |
| 8. | Dr. Y.N. Gaur | |
| 9. | Dr. D.C. Surana | External Member |
| | Prof. A.V. Ramanujam | } Special Invitees. |
| | Shri H.N. Dharwadkar | |

(1) Under Section 34 (4) (iv) of University Act, Dr. T.V. Rajan, Professor in Metallurgical Engineering Department, M.R. Engineering College, Jaipur was unanimously *elected* as member other than Convener of the Board of Studies to serve on the Committee of Selection of Examiners for the year.

(2) The Board scrutinized the statements of qualifications and teaching experience etc. of the teachers, received from the affiliated institutions and other Universities for inclusion in the revised panel of examiners.

Resolved that the revised panel of examiners be adopted.

(3) Many reports of examiners were placed on the table. It was decided that the Convener may

communicate appreciative and critical remarks to the Principals of the affiliated colleges for further necessary action as he deems fit.

(4) The Board considered the scheme of examination, detailed syllabi and draft ordinances for the Four Year B.E. Course prepared by the Principal, M.R. Engineering College, Jaipur in consultation with the Heads of Departments concerned and forwarded by him under the cover of letter No. F. 4 (N) 5/Acdm/MREC/81/17131, dated 22-10-1982 and subsequently amendments proposed therein.

Resolved to recommend that the draft ordinances, scheme of examination and detailed syllabi for the Four Year B.E. Course with all modifications proposed be approved (*Vide Appendix-I, II and III*) and it be implemented with effect from 1st B.E. Examination April/May, 1984.

N.B. : Prof. A.V. Ramanujam expressed his opinion that (i) the practical training of 75 days should be taken up by the students in one block between prefinal and final years and (ii) the backlog of theory and practical sessional should not exceed 50 percent of the total load in a given year. These two suggestions were, however, not accepted by the Board.

(5) The Board considered recommending courses of study and Text Books for the following examinations together with the relevant additions and/or alterations to the Regulations, Ordinances and Statutes, if any :—

I. B.E. Examinations (Annual Scheme) :

- (i) First B.E. Exam., April/May, 1985.
- (ii) Second B.E. Exam., April/May, 1985.
- (iii) Third B.E. Exam., April/May, 1985.
- (iv) Fourth B.E. Exam., April/May, 1985.
- (v) Final B.E. Exam., April/May, 1985.

tion, Ordinances and courses of study have been recommended vide foregoing resolution No. 4 above, the Board recommended *No-Change* in the syllabus for the following examinations :—

- (i) Third B.E. Exam., April/May, 1985,
- (ii) Fourth B.E. Exam., April/May, 1985,
- (iii) Final B.E. Exam., April/May, 1985.

II. M.E. (Regular Course) :

- (i) In this connection, the Board considered letter No. F. 15-8/82/T/2 dated 5th October, 1982 received from the member Secretary, All India Board of Post-Graduate Research in Engineering and Technology, Government of India, Ministry of Education and Culture, New Delhi with regard to change in duration of the M.Tech. Programme and selection of students through GATE (*Vide Appendix-IV*). The Board further considered ordinances for three semester M.E. Course and the detailed scheme of teaching and examination for M.E. Environmental Engineering, M.E. (Civil) Water Resources Engineering, M.E. (Met.) Engineering (Regular Courses) received from Principal, M.R.E. College, Jaipur under cover of his letter No. F.4 (P) 5/Acdm/MREC/81/1882 dated 6th Dec., 1982.

Resolved to recommend that the Ordinances, the detailed scheme of teaching and examination and detailed syllabus (Appendix-V, VI and VII) be approved and it be implemented with effect from first semester examination November,/December, 1983.

- (ii) The Board considered the draft of three semester examination scheme of M.E. Electrical Engineering Power System sent by the Principal, M.R. Engineering College, Jaipur vide letter No. F.4 (N)5 Acdm/MREC/81/1945, dated 14-2-1983 (*Vide Appendix-VIII*).

Resolved to recommend that the three semester examination scheme of M.E. Electrical Engineering Power system be approved.

- (iii) The Board considered the scheme of examination of M.E. (Mechanical) Three semester course received from the Principal under cover of his letter of. F.4 (N) 5/Acdm/MREC/81/2752 dated 5-3-83 and M.E. Structural Engineering Three Semester course received from Head of Structural Engineering Department (*Vide Appendix-IX and X*).

Resolved to recommend that the three Semester Examination Schemes of M.E. (Mechanical) and M.E. (Structural Engineering) be approved.

III. M.E. (Part-time) Course :

- | | |
|-----------------------------|-------------|
| (i) First Semester Exam., | } No Change |
| Nov/Dec., 84. | |
| (ii) Second Semester Exam., | |
| April/May, 85 | |
| (iii) Third Semester Exam., | |
| Nov./Dec., 84 | |
| (iv) Fourth Semester Exam., | } . |
| April/May, 85 | |
| (v) Fifth Semester Exam., | |
| Nov./Dec., 84 | |
| (vi) Sixth Semester Exam., | } |
| April/May, 85 | |

another letter has been received from Ministry of Education on the same subject and duly adopted vide Res. No. 5 (II) of the minutes.

(8) The Board considered the letter No. 2973. dated 10-3-1983 received from the Principal, M.R. Engineering College, Jaipur in connection with admission of students in M.E. Course twice a year to fall in line with the general practice as obtaining in other Engineering Institutions (*Vide Appendix-XI*).

Resolved to recommend that provision for admission of students in M.E. Course twice a year being incorporated in the Ordinances being adopted vide Resolution No. 5 (II) of the minutes.

(9) The Board considered D.O. letter No. V.C./83 P.A/R. dated 8th March, 1983 addressed to the Vice-Chancellor received from Dr. S.M. Mehrotra, Vice-Chancellor, University of Jodhpur, Jodhpur, regarding pre-engineering test examination.

The Board *noted* that the minimum qualifications for Ist B.E. class of the Four Year Degree Course has already been prescribed in the Ordinances relating to Four Year Degree Course vide Res. No. 4. The pertinent ordinance prescribing minimum qualification reads as follows :—

“The minimum qualification for admission to the Ist B.E. Class is that candidate must have passed the Ist Year examination of the three year degree course of the University of Rajasthan with English, Mathematics, Physics and Chemistry or any other examination considered equivalent or higher.”

The Board *further noted* that the Ordinances, Examination Scheme and detailed syllabi for the Four Year Degree Course have also been recommended vide Resolution No. 4 above.

The Board also *opined* that the admission procedure for admission to Ist B.E. of the Four Year Course may be determined by the Principals/Authorities of the affiliated Engineering Colleges.

(10) The Consideration of the remaining items on the agenda viz. No. 8, 12, 14 was postponed.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(R.D. Verma)
Convener.

APPENDIX-I

(Ref. Res. No. 4 of the minutes)

DRAFT ORDINANCES FOR THE IV YEAR B.E. DEGREE COURSE.

Faculty of Engineering & Technology
Bachelor of Engineering.

Abbreviations used for the various branches in Engineering :—

- C for Civil
- E for Electrical
- M for Mechanical
- Met. for Metallurgical

Ordinance Number O. 300-A :

- (i) This Ordinance shall be called B.E. Four Year (Annual Examination) Scheme Ordinance. The course of study will extend over a period of four years. In addition a period of atleast 75 days shall be devoted to Practical Training as described in Para (xiv).
- (ii) It shall apply to the following examinations :
 1. I B.E. Examination,
 2. II B.E. Examination,
 3. III B.E. Examination,
 4. Final B.E. Examination.
- (iii) The Annual examinations of I,II,III and Final B.E. Course would normally be held in the month of May every year. An additional examination of I,II,III and Final B.E. will be conducted in the month of October.
- (iv) Applications for appearing at the above examinations in the prescribed form shall be submitted to the Registrar, University of

Rajasthan, Jaipur through the Principal of the affiliated colleges by dates to be notified by them.

- (v) The examination be conducted by means of written papers, practicals, and/or viva-voce examinations including sessional work done in the Laboratories, Drawing office, Workshops, Factories and Engineering Works.
- (vi) The minimum qualification for admission to the I B.E. Class is that candidate must have passed the Ist Year examination of the Three Year Degree Course of the University of Rajasthan with English, Mathematics, Physics and Chemistry or any other examination considered equivalent or higher.
- (vii) A candidate who has been admitted to the I.B.E. class and has studies in an affiliated college for one academic year shall be eligible to appear at the First B.E. examination which shall be common for Civil, Mechanical, Electrical and Metallurgical Engineering Branches.
- (viii) The courses of study for the Second, Third and Final B.E. Examinations shall be separate for :—
 - (a) Civil Engineering Branch,
 - (b) Mechanical Engineering Branch,
 - (c) Electrical Engineering Branch,
 - (d) Metallurgical Engineering Branch.

A candidate who after passing the First B.E. Examination of the University has attended a regular course of study in accordance with the scheme of examination given hereafter in an affiliated college for one academic year shall be eligible for appearing at the Second B.E. Examination in Branch

(C) (M) (E) or (Met.), as the case may be, subject to stipulation given in Para (xi).

- (ix) A candidate who after passing the II B.E. Examination of the University and has attended a regular course of study in accordance with the scheme of examination given hereafter in an affiliated college for one academic year shall be eligible for admission to III B.E. course in the respective branch subject to stipulation given in Para (xi).
- (x) A candidate who after passing the III B.E. examination of the University and has attended a regular course of study in accordance with the scheme of examination given hereafter in an affiliated college for one academic year shall be eligible for admission to final B.E. course in the respective branch subject to stipulation given in para (xi).
- (xi) (a) No student who has not passed in all the heads of passing of the I B.E. examination will be permitted to join the III B.E. class as a regular student. No student who has not passed in all the heads of passing of the II B.E. examination will be permitted to join the Final B.E. class as a regular student. No student will be permitted to join as a regular student except at the beginning of the session.
- (b) A student who has failed in any of the annual examination will be required to reappear at only such heads of passing in which he had failed. He may reappear in the subjects concerned at the subsequent additional or Annual examinations.
- (c) The marks obtained at any of the subsequent chances will not be credited

in full except for those who obtain 35% or less marks. Candidates securing more than 35% marks will be given the credit of 35% plus half of the per cent difference between the actual marks secured and 35%. However, when a candidate appears in all the theory papers of an year as back, the marks obtained by him will be credited in full. These will apply to theory papers only. In practicals and sessionals the marks obtained will be credited in full. However, a student who fails in the Annual Examination will not be eligible for a place in the order of merit on clearing these papers at the subsequent examinations.

- (xii) The examination in each practical and sessional subject except Project, seminar and practical training shall be conducted by a Board of internal examiners comprising the Principal as Chairman, Head of the teaching department concerned as Ex-officio member and ordinarily two teachers of the teaching department concerned as members. This examination will consist of two components, namely (i) Sessional work done during the entire term and (ii) Practical examination at the end of term. The sessional work done during the terms will carry 60% of the marks allotted to the concerned subject. The head of teaching department concerned shall first obtain the assessment for the work done during the term from the teachers and will finalise the sessional component of marks after consultation with the teachers concerned which will be made available to the practical examiners at the time of the examinations.

The practical examination component carrying 40% of the marks shall be evaluated by the practical examiners by means of atleast two of the following methods :—

- (i) Performing an experiment of practical work.
- (ii) Written Quiz, and
- (iii) Viva-voce examination.

The practical examiners shall add the practical examination component of marks to the sessional component already made available to them and prepare a consolidated statement of marks and shall submit these marks to the University through the Principal. A record of the Sessional component of marks shall be maintained by the Principal of the affiliated Engineering College.

The passing or failing of the student in the Practical and/or sessional examination, shall be decided on the basis of these total marks and not on the individual components.

- (xiii) In each Annual Examination normally about half of the papers shall be set by external examiners.
- (xiv) Practical Training shall be for a period of 75 days at places approved by the Principal of the affiliated engineering college. The period of training may be split into two or three convenient instalments as decided by the Principal.

The examination for Practical Training shall be conducted during the final year class by a Board of Examiners. The Board will comprise one external examiner and two internal examiners.

- (xv) The Project work will consist of work done during the academic year and/or Twenty five working days at the end of the year. It will be examined by a Board of three examiners comprising one external examiner and two internal examiners who should ordinarily be teachers of Department to which the candidate belongs.
- (xvi) The Seminar will be assessed by the Head of the Department in consultation with the teacher (s) who will be detailed to audit the Seminar. The marks will be forwarded by the Head to the Principal who will communicate them to the University.

RULES REGARDING DECLARATION OF RESULT

- (a) The result of a candidate will be worked out at the end of each Annual Examination.
- (b) For a pass a candidate must obtain :—
- (i) 33% marks in each of the written papers.
 - (ii) 50% marks in each of the Practicals and sessionals.
- (c) For practicals and sessionals there shall be 60% marks for the works done during each term and 40% for the Practical and viva-voce at the time of each Annual examination.
- (d) No division will be awarded at I, II and III B.E. Examinations. Candidate passing the I to IV B.E. examinations shall be awarded division on the basis of marks totalled up as follows :—
- 25% of I B.E. examination
 - 50% of II B.E. examination
 - 75% of III B.E. examination
 - 100% of Final B.E. examination.

The award of division will be as follows :—

- | | |
|------------------------------|--|
| Ist Division
with honours | : 70% marks in the
aggregate and/or
above. |
| First Division | : 60% marks or above
in the aggregate but
below 70%. |
| Second Division | : 50% marks or above
in the aggregate but
below 60%. |
| Pass Class | : Below 50% marks in
the aggregate. |

- (e) For the award of prizes of ranking the marks obtained in the first attempt of the examination only will be taken into account.

(Ref. Res. No. 4 of Minutes)
(Scheme of Examination and teaching)

FIRST YEAR
(Common to all branches)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration Hrs.	Maximum marks.
1. English Language & Communication Techniques.	2	1	3	100
2. Mathematics I	2	1	3	100
3. Mathematics II	2	1	3	100
4. Physics	3	1	3	100
5. Electrical Engineering	2	0	3	100
6. Engineering Chemistry	2	1	3	100
7. Mechanical Engineering	2	0	3	100
8. Practical Geometry	0	0	3	75
9. Machine Drawing	0	0	3	75
Total	15	5	—	850

B. Practicals & Sessions :

Subject	Hrs./week	Maximum marks.
10. Physics Lab.	2	75
11. Engg. Chemistry Lab.	2	75
12. Workshop Practice	4	150
13. Practical Geometry	3	75
14. Machine Drawing	3	75
Total	14	450

C. Tutorial and Assignment :

Grand Total	34 hrs./week	100
		1400 marks

SECOND YEAR

A. Written Papers : (Civil Engineering)

Subject	Lecture Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum marks.
1. Mathematics III (C)	2	1	3	100
2. Civil Engg. Materials and Construction	2	0	3	100
3. Computer Methods and systems Engg. for Civil Engineers.	2	0	3	100
4. Surveying I				
5. Mechanics of Structures	2	1T	3	100
6. Strength of Materials and theory of structures.	2	1T	3	100
7. Fluid Mechanics (C)	2	1T	3	100
8. Engineering Geology (C)	2	1T	3	100
*9. Elective I (C)	2	—	3	100
Any one of the following :	2	—	3	100
(a) Material Technology for Civil Engg (C)				
(b) Electronics and Instrumentation				
(c) Mechanical Engg. II (C)				
(d) Advanced Mathematics (C)				
Total :	18	3		900

*Any of the alternatives will be dropped if atleast 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum marks.
10. Humanities & Social Science	2	75
11. Surveying including field exercises	2	100
12. Applied Mechanics Lab.	2/2	50
13. Material Science Lab.	2/2	50
14. Building Drawing	2/2	50
15. Graphic Statics	2/2	50
16. Hydraulics Lab.	2/2	50
17. Geology Lab. (C)	2/2	50
18. Computer Methods and system Engg. for Civil Engineers	2/2	50
19. Electrical Engg. Electronics & Instrumentation Lab.	2	75
Total :		600
C. Tutorial and Assignment.		100
Grand Total :		34 hrs/week 1600 marks

SECOND YEAR
(Electrical Engineering Branch)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Mathematics III (E)	2	1	3	100
2. Electrical Engineering Materials	2	0	3	100
3. Computer Methods (E)	2	0	3	100
4. Electronics I	3	0	3	100
5. Circuit Analysis I	2	1	3	100
6. Electrical Machines I	2	1	3	100
7. Electrical Measurements	2	0	3	100
8. Generation of Elect. Power	2	0	3	100
*9. Elective I (E)	2	0	3	100
Any one of the following :				
(a) Utilization of Elect. Power				
(b) Hydraulics & Waterpower Engg.				
(c) Applied Mechanics				
(d) Thermal Power Engineering				
Total :				900

* Any of the alternatives may be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs/week	Maximum Marks.
10. Humanities & Social Sciences	2	75
11. Material Sciences Lab.	2/2	50
12. Engineering Mechanics	2/2	50
13. Civil Engineering Lab.	2/2	50
14. Mech. Engg., Lab.	2/2	50
15. Electrical Workshop	2	100
16. Electrical Lab.	2	125
17. Electrical Engg., Drawing	2	100
Total :		600

C. Tutorial and Assignments

Grand Total : 34 hrs/week 1600

SECOND YEAR (Mechanical Engineering)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Mathematics III (M)	2	1	3	100
2. Production Materials & Processes	2	0	3	100
3. Computer Methods for Mechanical Engineering applications.	2	0	3	100
4. Applied Solid Mechanics	2	0	3	100
5. Fluid Engineering	2	0	3	100
6. Machine Drawing & Design	2	0	3	100
7. Dynamics of Machinery I	2	0	3	100
8. Technical Thermodynamics I	2	0	3	100
*9. Elective I	2	0	3	100
Any one of the following :				
(a) Automobile Engineering				
(b) Basic Electronics				
(c) Mechanics of Structures				
(d) Material Science				
Total :				900

* Any of the alternatives may be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
10. Humanities & Social Science	2	75
11. Material Science Lab.	2/2	50
12. Engineering Mechanics	2/2	50
13. Civil Engineering Lab. (Fluid Mechanics)	2/2	50
14. Electrical Lab.	2/2	50
15. Machine Drawing & Design	3	125
16. Production Practice I	3	100
17. Mechanical Engineering Lab. I	3	100
Total :	15	600

C. Tutorial and Assignment :

	100
Grand Total :	34 Hours/week 1600 marks

SECOND YEAR

(Met. Engg.)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Mathematics III (Met.)	2	1	3	100
2. Engineering Materials (Met.)	2	0	3	100
3. Computer Methods (Met.)	2	0	3	100
4. Mechanical Behaviour & Testing of Metals.	2	—	3	100
5. Metallurgical Thermodynamics and Kinetics.	2	2	3	100
6. Introduction to Physical Metallurgy	2	0	3	100
7. Introduction to Process Metallurgy	2	0	3	100
8. Production of Iron and Ferro alloys.	2	0	3	100
9. Electives (Any one of the following)				
(a) Instrumentation & Electronics				
(b) Production Technology				
(c) Mechanics of Materials	2	0	3	100
	18	3		900

B. Practicals & Sessionals :

Subject	Hrs/week	Maximum Marks.
10. Humanities & Social Science	2	75
11. Material Science Lab.	2/2	50
12. Engineering Mechanics	2/2	50
13. Civil Engineering Lab. (Surveying or Fluid Mechanics).	2/2	50
14. Introduction to Physical Met.	2	75
15. Metallurgical Drawing & Blue Print Reading.	2	75
16. Electrical Engg. Lab.	2	50
17. Mechanical Behaviour & Testing of Metals	2	100
18. Met. Thermodynamics & Kinetics	0	75
C. Tutorial & Assignment :		100
	13	700
Grand Total :	34 hours/week	1600 marks.

SECOND YEAR

Electrical Engineering (Electronics Option)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Mathematics III (E)	2	1	3	100
2. Electrical Engg. Material	2	0	3	100
3. Computer Methods (E)	2	0	3	100
4. Electronics I	3	0	3	100
5. Circuit Analysis I	2	1	3	100
6. Electrical Technology	2	0	3	100
7. Electrical Measurements	2	0	3	100
8. Physical Electronics	3	0	3	100
*9. Elective I (E) (Electronics Option)	2	0	3	100
Any one of the following :—				
(a) Line communication Engg.				
(b) Principles of Electrical Power Engg.				
(c) Hydraulics & Water Power Engg.				
(d) Thermal Power Engineering				
Total :				900

* Any of the alternatives may be dropped if at least to 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
10. Humanities & Social Sciences.	2	75
11. Material Sciences Lab.	2/2	50
12. Engineering Mechanics	2/2	50
13. Civil Engineering Lab.	2/2	50
14. Mechanical Engineering Lab.	2/2	50
15. Electrical Workshop	2	100
16. Electrical Lab.	2	125
17. Electrical Engineering Drawing	2	100
Total :		600

C. Tutorial and Assignment :

Grand Total :	34 Hrs./week	1600
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THIRD YEAR

A. Written Papers : (Civil Engineering)

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Theory of Structures	3	1/2T	3	100
2. Structural Engineering Design I	2	1/2T	3	100
3. Hydraulics and Hydraulic Machines	2	1/2T	3	100
4. Surveying II	2	1/2T	3	100
5. Soil Mechanics and Foundation Engg. I	2	1/2T	3	100
6. Structural Engineering Design II	2	1/2T	3	100
7. Building Technology	2	—	3	100
8. Transportation Engg.	3	—	3	100
*9. Elective II (C)	2	—	3	100
Any one of the following :—				
(a) Advanced Construction & Construction Management.				
(b) Advanced Structural Analysis				
(c) Theory of Elasticity and Plasticity and experimental stress. analysis.				
Total :				20 3T — 900

* Any of the elective will be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
10. Structural Engg. Design I	2/2	50
11. Hydraulics Lab.	2/2	50
12. Material Testing Lab.	2/2	50
13. Surveying II including camp	3/2	100
14. Soil Mechanics Lab.	2/2	50
15. Structural Engg. Design II	2/2	75
16. Building Drawing & Design	2	100
17. Roads Material Testing Lab.	2/2	50
18. Concrete Lab.	3/2	75
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Total :	11	600
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C. Tutorial and Assignment :		100
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Grand Total :	34 Hrs./week	1600 marks
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THIRD YEAR (Electrical Engineering Branch)

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1999

UNIVERSITY OF RAJASTHAN

[17TH MARCH,

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Electronics II	3	0	3	100
2. Circuit Analysis II	2	1	3	100
3. Electrical Machines II	2	1	3	100
4. Transmission & Distribution of Elec. Power.	2	1	3	100
5. Electromagnetic Fields	2	0	3	100
6. Instrumentation	2	0	3	100
7. Control Systems	2	1	3	100
8. Digital Electronics	2	0	3	100
*9. Elective II (E)	2	0	3	100
Any one of the following :				
(a) High Voltage Engg.				
(b) Non-conventional Engg. Sources				
(c) Comm. Systems				
Total :				900

* Any one of the alternatives may be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
10. Electrical Machines Lab.	3	125
11. Electronics Lab.	2	125
12. Electrical Meas. Lab.	2	125
13. Elect. Engg. Design	2	125
14. Electrical Workshop	2	100
Total :	11	600

C. Tutorial and Assignment :

Grand Total: 34 Hrs./week 1600

THIRD YEAR (Mechanical Engineering)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Net Work Analysis and work Study	2	0	3	100
2. Dynamics of Machinery II	2	0	3	100
3. Mechanical Engineering Design I	3	0	4	100
4. I.C. Engineering	2	0	3	100
5. Production Technology I	3	0	3	100
6. Technical Thermodynamics II	3	0	3	100
7. Production Management	3	0	3	100
8. Industrial Engineering	2	0	3	100
9. Elective II	2	0	3	100
Any one of the following :				
(a) Experimental Stress Analysis				
(b) Production Machines				
(c) Material Handling and Plant layout				
Total :				900

* Any of the alternatives may be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals ;

Subject	Hrs./week	Maximum Marks.
10. Mechanical Lab. II	3	150
11. Production Engineering Lab.	3	150
12. Mechanical Engineering Design I	3	150
13. Production Practice II	3	150
Total :		600

C. Tutorial and Assignment :

Grand Total :	34 Hrs./week	1600 marks
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THIRD YEAR

(Met. Engg.)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Met. & Instrumental Analysis	2	0	3	100
2. Production of Steel	2	0	3	100
3. Phase Transformations & Heat Treatment	2	0	3	100
4. Mineral Dressing	2	0	3	100
5. Geology & Mineralogy	2	0	3	100
6. Foundry Technology	2	0	3	100
7. Furnace Technology	2	0	3	100
8. Non-ferrous Extractive Met.	2	0	3	100
9. Electives	2	0	3	100
Any one of the following :—				
(a) Powder Metallurgy				
(b) Experimental Techniques in Met.				
(c) Energy Economy and Pollution Control in Met. Industries				
(d) Rate Processes				
	2	0	3	100
Total :	18	0		900

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
10. Metallurgical Field work & Project	0	75
11. Metallurgical Industries	2	75
12. Metallurgical Calculation & Furnace Tech.	2	75
13. Foundry Technology	2	75
14. Mineral Dressing	2	75
15. Geology	3	75
16. Met. & Instrumental Analysis	3	75
17. Heat Treatment & Physical Met.	2	75
18. Tutorial & Assignment	—	100
Total :		700
Grand Total :		34 Hrs./week 1600 marks

THIRD YEAR

Electrical Engineering (Electronics Option)

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UNIVERSITY OF RAJASTHAN

[17TH MARCH,

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Electronics II	3	0	3	100
2. Circuit Analysis II	2	1	3	100
3. Microwave Electronics	3	0	3	100
4. Integrated Electronics	2	0	3	100
5. Electromagnetic Field Theory	3	0	3	100
6. Instrumentation	2	0	3	100
7. Control Systems Engineering	2	1	3	100
8. Digital Electronics	2	0	3	100
9. Elective II (E) (Elect. Opt.)	2	0	3	100
Any one of the Following :—				
(a) Industrial Electronics				
(b) Direct Energy Conversion				
(c) Electrical Communication System				
Total :				21
				2T
				900

* Any of the alternative may be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
10. Electrical Technology Lab.	2	125
11. Electronics Lab.	3	125
12. Electrical Measurement Lab.	2	125
13. Electronic Engg. Design	2	125
14. Electrical Workshop	2	100
Total :		600

C. Tutorial and Assignment :

Grand Total :	34 Hrs./week	1600
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FOURTH (FINAL) YEAR

(Civil Engineering)

A. Written Papers :

Subject	Hrs./week	Exam. Duration	Maximum Marks.
1. Structural Engg. Design II	3	4	150
2. Public Health Engineering	3	3	100
3. Irrigation & Water Power Engg.	3	3	100
4. Soil Mechanics Foundation Engg. II	3	3	100
5. Structural Engineering Design IV	1-1/2T	3	75
6. Engineering Hydrology	1-1/2T	3	75
*7. Elective III (C)	2	3	100
Any one of the following :—			
(a) Advanced Transportation Engg.			
(b) Advanced Water Resources and Water Quality Management			
(c) Prestressed Structures			
Total :	16-1T		700

* Any of the electives may be dropped if at least 10 students do not opt for it.

FOURTH (FINAL) YEAR

(Electrical Engineering Branch)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks.
1. Power Electronics	3	0	3	100
2. Elect. Drives & Traction	2	1	3	100
3. Switchgear & Protection	3	0	3	100
4. Elect. Machines Design	3	0	3	100
5. Power System Engineering	2	0	3	100
6. Electrical Machines III	2	1	3	100
*7. Elective III (E)	2	0	3	100
Any one of the following :				
(a) Power System Analysis				
(b) Computer Engineering				
(c) Microprocessors & Integrated circuits				
Total :				17 2 — 700

* Any of the alternatives may be dropped if at least 10 students do not opt for it.

B. Practicals & Sessionals :

Subject	Hrs./week	Maximum Marks.
8. Project	2	150
9. Seminar	2	100
10. Practical Training	—	150
11. Elect. Engg. Project Lab.	3	150
12. Industrial Economics & Management	2	75
13. Control System Lab.	2	75
14. Elect. M/C Design	2	75
15. Elect. Installation Design	2	75
Total :	15	850

C. Tutorial and Assignment :

Grand Total : 34 Hrs./week 1650

FOURTH YEAR

(Mechanical Engineering)

A. Written Papers :

Subject	Lecture per/week	Tutorial	Exam. duration	Maximum Marks
1. Dynamics of Machinery III	3	0	3	100
2. Mechanical Engineering Design II	3	0	3	100
3. Production Technology II	3	0	3	100
4. Turbo Machinery	3	0	3	100
5. Refrigeration and Air Conditioning	3	0	3	100
6. Power Plant Engineering	3	0	3	100
*7. Elective III	3	0	3	100
Any one of the following :				
(a) Operations Research Methods in Mechanical Engineering.				
(b) Design of Machine Tools Instrumentation and Automatic Control (M)				
Total	21	0	21	700

* Any of the alternatives may be dropped if atleast 10 students do not opt for it.

B. Practical & Sessionals :

Subject	Hrs./week	Maximum Mark.
8. Mechanical Lab. III	3	150
9. Mechanical Engineering Design II	3	150
10. Production Practice III	3	150
11. Seminar	2	100
12. Project	2	150
13. Practical Training	1	150
Total	13	850

C. Tutorial and Assignment :

Grand Total :	34 Hrs./week	100
		1650 Marks

FOURTH (FINAL) YEAR
(MET. ENGG.)

A. Written Papers :

Subject	Lecturer Hrs./week	Examination duration	Maximum Marks
1. Materials in Industry	2	3	100
2. Applied X-Rays and Physics Metals	2	3	100
3. Electrometallurgy and Corrosion	2	3	100
4. Machanical Working of Metals	2	3	100
5. Metallurgy of Aluminium	2	3	100
6. Engineering Economics and Management	2	3	100
7. Elective (Any one of the following) (a) Applied Met. Thermodynamics (b) Technology of Alloy Steel and Cast iron (c) Mini steel plant Tech.	2	3	100
Total	14	21	700

B. Practical & Sessionals :

Subjects	Hrs/week	Max. Marks.
8. Applied X--Rays and Physics of Metals	2	75
9. Electrometallurgy and Corrosion	2	75
10. Engineering Economics and Management	2	50
11. Mechanical Working of Metals	2	50
12. Metallurgical Design	2	75
13. Extractive Metallurgy	2	75
14. Standards, Inspection and Quality Control	2	50
15. Project	4	150
16. Seminar	2	100
17. Practical Training Report	-	150
18. Tutorials and Assignments	-	100
Total	20	950
Grand Total	34 Hrs./week	1650 Marks

FOURTH (FINAL) YEAR

Electrical Engineering (Electronics Option)

A. Written Papers :

Subject	Lectures Hrs./week	Tutorial Hrs./week	Exam. Duration	Maximum Marks
1. Power Electronics	3	0	3	100
2. Acoustical Engineering	2	1	3	100
3. Microwave Engineering	3	0	3	100
4. Radio Receivers & Transmitters	3	0	3	100
5. Transmission Lines, Antennas and Wave Propagation.	3	0	3	100
6. Computer Engineering	2	0	3	100
7. Elective III (E) (Elect. Opt.)	2	0	3	100
Any one of the following :				
(a) Radar and Television Engineering				
(b) Microprocessors				
(c) Nuclear Power Engineering				
Total	18	1		700

*Any of the Alternative may be dropped if atleast 10 students do not opt for it.

B. Practicals & Sessional :

Subject	Hrs./week	Max. Marks
8. Project	3	150
9. Seminar	1	100
10. Practical Training	-	150
11. Electronic Engineering Project Lab.	3	150
12. Industrial Economics and Management	2	75
13. Control System Lab.	2	75
14. Electronic Engineering Design	2	75
15. Electronic System Installation Design	2	75
	15	850
C. Tutorial & Assignment		100
Grand Total	34 Hrs./week	1650

APPENDIX-III

*(Ref. Res. No. 4 of the minutes)***Four Year Degree Courses**

Ist Year B.E. *English* : Language and Communication
Techniques :

I. Prose and Poetry :

The following passages from :

An English Miscellany Ed. : Tongue, R.K. and
Kumar S.K.
Oxford University
Press.

Prose :

1. Engine Trouble—R.K. Narayan
2. The Universities have much to teach us—J. Nehru.
3. Between the two worlds : The Centre of the Universe : Ved Mehta.
4. The happy man : Bertrand Russell
5. The engagement : M.E. Otley
6. Public transport in London and Delhi : Nirad Chaudhuri.

Poetry :

1. Ode on Solitude—Alexander pope
2. The little black boy—William Blake
3. The Human Seasons—John Keats
4. The unknown citizen—W.H. Auden (20+10)
30 marks

II. Grammar and Composition :

1. Precis writing 15 marks.
2. Report writing 20 marks.

3. Business Letters 15 marks.
4. *Grammar :*
 - (a) Articles
 - (b) Active-Passive
 - (c) Tenses
 - (d) Conditional sentences
 - (e) Modals
 - (f) Subject-verb agreement
 - (g) Prepositions
 - (h) Direct-Indirect speech 20 marks.

FIRST YEAR (COMMON TO ALL BRANCHES)

2. Mathematics Paper-I

(a) *Solid Co-ordinate Geometry.*

Cartesian Co-ordinates in space, direction cosines, equation of a plane and the general equation of the first degree in three variables, Angle between two planes, perpendicular distance of a point from a plane, equation to a plane bisecting the angle between two planes, volume of a tetrahedron, equations of a straight line, intersection of a plane and a straight line, shortest distance between two non-intersecting straight lines in space, Coplanar lines.

Equation of a sphere, Intersection of a sphere and a plane, Tangent planes and normal lines; Equations of a right circular cylinder.

(b) *Differential Calculus :*

Asymptotes, Curvature, concavity, convexity and points of inflexion (Cartesian Co-ordinates only), simple curve tracing (Cartesian) and standard polar curves—Cardioid, Lemniscate of Bernoulli, Limacon, Equi-angular spiral,

Folium of Descartes. Partial Differentiation, Euler's theorem on homogeneous functions, Approximate Calculations.

Maxima and minima of functions of one variable or two variables connected by a relation.

- (c) *Integral Calculus* : Applications of integral calculus in finding lengths, areas of simple plane curves, volumes and surfaces of solids of revolution, centre of gravity of symmetrical bodies; Trapezoidal and Simpson's Rule.

Double integrals, Areas and volumes by double Integration change of order of integration.

- (d) *Infinite Series* :

Simple tests of convergence—Ratio Test, Root Test, comparison test, Higher Ratio Test and Logarithmic Test.

3. Mathematics Paper-II :

- (a) *Vector Calculus* :

Differentiation and integration of vector functions, vector and scalar point functions, gradient, divergence, curl Line integrals.

- (b) *Statics* :

Principle of virtual work, common catenary.

- (c) *Dynamics* :

Angular motion, radial and transverse velocities and accelerations, tangential and normal accelerations, Rectilinear motion—simple Harmonic motion, motion under inverse square law, Rectilinear motion in a resisting medium, Projectiles, constrained motion—circular motion, Banking of tracks.

(d) *Differential Equations* :

Differential equations of first order and first degree, linear differential equations of higher order with constant co-efficients.

4. Physics

A. Optics :

1. *Interference* : Theory of Fresnel's biprism and measurement of thickness of thin sheets. Interference with an extended source. Newton's rings and determination of wavelength by Newton's rings. Colour of thin films.
2. *Diffraction* : Fraunhofer diffraction by a rectangular slit and circular hole. Plane diffraction grating. Rayleigh's criteria of resolution. resolving power of telescopes, microscopes and plane diffraction grating.
3. *Polarisation* : Idea of plane, circularly and elliptically polarised light. Half-wave and quarter-wave plates. production and analysis of circularly and elliptically polarised lights. Optical activity. Specific rotation and Laurent's half shade polarimeter.
4. *Laser* : Spontaneous and induced emission of light. Elementary description of laser and its applications.

B. Modern Physics :

1. *X-rays* : Origin of X-rays, Characteristics of X-rays. X-ray spectra and Mosley law. Scattering of X-rays by loosely bound electrons (compton effect). Thomson scattering and polarisation of X-rays. Diffraction of X-rays and Bragg's law. Determination of X-ray wavelength.

2. *Wave mechanics* : Dual aspect of matter and energy. Thomson's experiment, Schrodinger's equation for a single particle. Solution of Schrodinger's equation for a square well potential. Tunnel effect. Heisenberg uncertainty principle.
3. *Properties of nucleus* : Mass defect and packing fraction. Binding energy of nucleus. Nuclear fission and fusion and Nuclear reactors.
4. *Special theory of relativity* : Postulates of special theory of relativity, Relativity of length, mass time and velocity. mass energy relationship.

C. Electricity, Magnetism and Electronics :

1. *Magnetic effect of current* : Force on a current element in magnetic field. Moving coil Ballistic galvanometer, Damping, Logarithmic decrement. Measurement of high resistance by method of leakage. Measurement of strong magnetic field by search coil.
2. *Magnetic properties of materials* : Magnetic hysteresis and loss of energy in hysteresis cycle. Uses of hysteresis curves. Method of determining the magnetic properties of materials in the form of a ring.
3. *Thermo electricity* : Seebeck, Peltier and Thomson effects, Laws of thermo electricity Application of thermodynamics to a thermocouple. Thermo electrical power. Thermo-electric diagrams and their uses.
4. *EM. Waves and Electronics* : Generation of EM. waves of different frequencies, Idea of magnetron as generator of microwaves, Propagation and reception of EM waves of different frequencies. Applications of

transistor as rectifier, amplifier, oscillator, modulator and demodulator. Working of a straight and superheterodyne receiver. Cathode ray oscilloscopes and its application Television principles.

5. ELECTRICAL ENGINEERING

1. Circuit concepts, circuit elements—R.L.C.
2. Kirchhoff's Laws, Network Simplification, Network Solutions by Loop method, Principles of Superposition & Thevenin's.
3. Generation of alternating voltage—Sinusoidal voltages and currents. Average and r.m.s. values of periodic waves, phase angle, phasor representation, steady state response of single phase a.c. circuits—purely resistive, inductive and capacitive circuits. R-L, R-C and R-L-C series and parallel circuits. Concept of impedance, average power and, power factor, Reactive power. Resonance in series parallel circuits. Elementary idea of balanced 3-phase circuits, current and voltage relationship in 3-phase star and delta connections.
4. Working principles of moving coil, moving iron and dynamometer types of instruments.
5. Concept of mutual induction, theory of operation and construction of single phase transformer, e.m.f. equation, development of phasor diagram and equivalent circuit, determination of parameters from No load and Short-circuit tests, efficiency and voltage regulation.
6. Basic ideas of electromechanical energy conversion. Construction and principle of operation of d.c. generator, types of excitation, No load and load characteristics of d.c. generator, qualitative treatment of armature reaction and commutation. Principle of operation d.c. motor, load characteristics of series, shunt and compound motors, Description of starting and speed control of d.c. motors, applications of d.c. motors.
7. Basic ideas of revolving field. Construction and principle of operation of 3-phase induction motors—slip, speed torque characteristic, qualitative treatment of starting and speed control, applications of induction motor.
8. Construction and principle of operation of 3-phase synchronous generator, relation between speed, No. of poles and

frequency, brief idea of slow medium and high speed generators, Magnetising and load characteristics, voltage regulation. Principle of operation of 3-phase synchronous motor, V-curves, starting and applications of synchronous motors.

6. ENGINEERING CHEMISTRY

1. Water :

Municipal Supply Water : Sources of water, requisites of drinking water, purification, filtration and sterilisation.

Hard & Soft Water : Methods of removal of hardness, problem on water treatment.

Water for boilers: Boiler feed water, boiler troubles and the methods for their removal.

2. Chemical fuels :

Classification of fuels :

Solid fuels: Coal and its classification, analysis of coal, gross and net calorific value and its determination by Bomb Calorimeter.

Manufacture of coke, properties of hard and soft cokes.

Liquid fuels: Petroleum and products of distillation, knocking and octane number, cracking, synthetic petrol and power alcohol.

Gaseous fuels: Production, utilisation and determination of calorific value by Junker's Calorimeter.

Combustion: Calculations based on practical aspects, analysis of the gas and interpretation of results.

3. Refractories:

Definition, properties, classification, production & utilization.

4. Glass :

Preparation, varieties and uses.

5. Cement :

Manufacture of Portland cement, composition and chemistry of setting and hardening.

6. Polymers :

Study of the following polymers :

(a) *Plastics*: Types of plastics, compounding of plastics and their fabrication.

(b) Rubber: Natural rubber, vulcanisation, elastomers and their uses.

7. Oils and fats :

Composition, classification, saponification value, iodine value and R.M. Value. Hydrogenation, manufacture of Soap.

Lubricants, their classification, properties and tests.

8. Paints :

Varnishes and lacquers: Definition, their constituents and utilization.

9. Corrosion :

Definition and its significance. Theories of corrosion and its prevention.

10. Chemical kinetics :

Order and molecularity of a reaction, first and second order reactions. Definition of the order of a reaction, Energy of activation and Arrhenious equation.

11. Electrochemistry :

Electrical conductivity : specific molecular and equivalent conductivity; effect of dilution.

Hydrogen ion concentration and measurement of PH. Galvanic cells, oxidation-reduction potentials : influence of concentration; polarisation and over-voltage.

12. Phase rule :

Definition and meaning of the terms involved. Applications of phase rule to one component system. Study of two component systems with reference to alloy formation and eutectic mixture.

Practicals :

1. Preparation of a standard solution—acidimetry and alkeliometry.
2. Estimation of sodium hydroxide and sodium carbonate in the given alkali mixture.
3. Estimation of Fe^{++} present in the given solution using $\text{K}_2\text{Cr}_2\text{O}_7$ (external indicator).
4. Estimation of Fe^{++} present in the given solution using $\text{K}_2\text{Cr}_2\text{O}_7$ (internal indicator).
5. Estimation of CuSO_4 iodometrically.

6. Estimation of $K_2Cr_2O_7$ iodometrically.
7. Estimation of chlorine in the given water sample.
8. Estimation of Ag^+ in a given solution.
9. To determine the amount of Fe^{++} in plain carbon steel and Haematite ore.
10. To estimate copper in brass.
11. Estimation of Ba^{++} as Barium sulphate.
12. Determination of calorific value of a solid or liquid fuel by Bomb Calorimeter.
13. Analysis of a flue gas by Orsat apparatus.
14. To determine the temporary hardness of boiler feed water.
15. To determine the permanent hardness of boiler-feed water.
16. To determine the carbonate and non-carbonate hardness of boiler feed water (by Soda-Reagent Method).
17. To determine the temporary and permanent hardness of a water sample by the standard soap solution method.
18. To determine the temporary and permanent hardness of a water sample by E.D.T.A. method.
19. To determine the flash point of an oil by Pensky Martin apparatus.
20. To determine the viscosity of an oil by Red-wood Viscometer.

7. MECHANICAL ENGINEERING

Ideal Gases & Vapours : Introduction to perfect gases, equation of State, gas constant, Universal gas constant concept of entropy, Equations for work done and qualitative change in heat during standard thermodynamics processes like constant, volume constant pressure isothermal, adiabatic, isentropic & polytropic processes on perfect gas, Sensible, latent and super-heat of steam. Introduction to steam charts. Introduction to hyperbolic, throttling and write drawing processes on steam.

Steam Engineering : Basic classification of smoke tube, water tube high pressure, supercritical and package boilers. Functions of boiler mountings and accessories, classification of steam engine and steam turbines.

I.C. Engines : Classification according to Auto, Diesel, and Dual Combustion cycles, two and four stroke operation, water and air cooling, multicylinder layout, etc. Concept of carburetion, spark ignition and fuel injection. Application Speed and power range of I.C. Engines.

Refrigeration & Air Conditioning : Elementary concepts of refrigeration and air conditioning. Working principles in brief and schematic layout of refrigerator's air collers, air conditioners and ice plants.

Manufacturing materials & processes : Elementary introduction to engineering materials like cast iron, mild steel, copper zinc aluminium, common alloys like high speed steel. stainless. steel brass, Brons. gun metal etc. and their uses. General classification of the manufacturing processes. Brief description and applications of hot and cold working processes.

Machine Tools : General classification. brief survey of principles working and applications of various machine tools.

Simple Machines : Brief description of differential wheel and axle pulley blocks, differential blocks, single and double purchase winch crab. worm and worm wheel gears kange of mechanical advantage, velocity ration and efficiency of simple machines, Classification of methods of lubrication.

Power Transmission : Classification and application of mechanical drives like belts, ropes, chains and gear drives (excluding ephicycle trains) and their velocity ratios, Ratio of tension in belts and ropes length of the belts and ropes.

Books Recommended :

1. Patel R.C., and Karamchandani, C.T. : Elements of Heat Engines Vol. I, Acharya Book Dept., 78.
2. Vaswani, M.M.: Mechanical Technology, Vol. I, Orient Longman, 73.
3. Khurmi, R.S. : Text Book of Applied Mechanics, S. Chand & Co., 76.

8. PRACTICAL GEOMETRY

Involutes Helix-Spirals and cams. Auxiliary Projections. Section of Solids. Projection of Solids in various planes and in various positions. Development of Surfaces. Simple cases of inter-penetration of Solids.

9. MACHINE DRAWING

Introduction :

Conventional representation of lines and materials. Dimensioning—Gnotations and placing. General run of dimensioning. Orthographic Projections : First and third angle method.

Sectional drawings of simple machine parts, like ball bearing small brackets, levers etc. and rolled Section, round square, pipe, angle, channel, T-Section, Z-Section, I-Section. Fasteners : Rivets : Types of rivets, riveted joints, lap butt and typical butt simple joint connections, Screw threads : 'V' type threads : I.S. Whitworth, BSW, BA American National Threads.

Square, acme, buttress knuckle, right and left hand threads, multistart threads.

Bolts and nuts : Types of bolts, nuts and washers, Locking devices of nuts.

Types of studs and set screws. Foundation bolts.

Pins : Uniform, taper and split pins.

Keys : Types of keys, spline shafts.

Simple Bush and foot-step bearings : for (free hand sketching)

Bearing : Plummer block, Ball, roller and needle bearings shaft.

Couplings : Protected type, flange couplings, mufftype, pin type, flexible couplings.

Pipes and pipe joints : Spigot and socket types, flange wiped, lams and union type joints.

Standard pipe fittings : Elbow bend tee, cross union, plug socket, reducer.

Valves : Stop globe, gate check butterfly, needles types of valves.

Layout of pipings : Single line, double line with standard conventions for pipe fittings, valves and supports.

Weldings drawing : Welding symbols for arc gas and resistance weldings. Different types of typical welded joints.

Belts & Pulleys : Types of pulleys and belts. V-belt, flat-belt

Rope. pulleys : Fast and loose Jockey pulley.

Note : In all above mentioned topics ISI specification S.—596-1961 should be followed.

SECOND YEAR B.E.

(Civil Engineering)

1. Mathematics Paper III (C) :

(a) *Differential Equations:*

Ordinary differential equations of second order with variable co-efficients, variation of parameters, solution in series.

Partial differential equations of first order, Lagrange's method, standard forms, Charpit's method.

Method of separation of variables—applications to the solution of wave equation in one dimension, Laplace's equation in two dimensions, diffusion equation in one dimension.

(b) *Spherical Trigonometry :*

Spherical triangle, formulae connecting sides and angles.

(c) *Numerical Analysis :*

Finite Differences—Forward, backward and central differences, Newton's forward and backward difference interpolation formulae, Stirling's formula, Numerical Differentiation and Integration.

Solution of ordinary differential equations of first order by the methods of Picard, modified Euler, Milne and Runge-Kutta (fourth order method).

(d) *Complex Variables:*

Analytic functions. Cauchy - Riemann conditions, Elementary conformal mapping.

(e) *Fourier Series:*

Expansion of simple functions in Fourier Series. Harmonic Analysis.

2. CIVIL ENGINEERING MATERIALS & CONSTRUCTION

(A) *Civil Engineering Materials :*

1. *Introduction :* Classification, properties and selection of materials.

2. *Stones* : Classification, general characteristics, identification. Selection Criteria and uses of common building stones. Quarrying of stones. Seasoning and dressing of stones. Testing of stones.
3. *Clay Products* : Bricks, Tiles, Terra Cotta etc., their composition, characteristics, manufacture and testing.
4. *Cements* : Hydraulic Cements, Portland Cement and its manufacture and types, chemistry of setting and hardening, Gels and Pastes. Admixtures and their chemical behaviour, Phase equilibrium diagram for Portland cement, I.S. tests and specifications.
5. *Limes* : Occurrence, properties, types, manufacture, IS tests and specifications, Uses.
6. *Mortar and Plastics* : Constituent, types, preparation, tests and uses. Types of pointings, Plaster for pointings and merits.
7. *Timber* : Definition of related terms, classifications, characteristics, tests, uses, seasoning, preservation, Fire proofing. Ply-woods, Fibre Boards and their manufacture and uses.
8. Plastics, classifications, properties, fabrication and uses in building industry.
9. *Metals* : Properties and use of mild steel and aluminium in building industries.
10. *Miscellaneous Materials* : Characteristics, types, uses and limitations of glass, Rubber, Asbestos, G.I. Plaster of Paris, Bituminous felts and Coirs and their products, Prestressed and Precast concrete.

(B) **Building Requirements and Masonry Construction :**

1. *Building Requirements* : Functional requirements of a building as a whole, building components, their functions and requirements. Classification of building by occupancy and by type of construction. Load bearing construction and framed structure construction. Partition Wall construction: Types, purposes and use.
2. *Stone and Brick Masonry* : Basic principles of sound masonry work, different types of bonds and building code requirements.
3. Pointing and Plastering. Types and uses.

3. COMPUTER METHODS & SYSTEM ENGINEERING FOR CIVIL ENGINEERS.

(A) Computer Methods :

- (a) Development of digital and analog computers. Use of computers in Civil Engineering. Number systems : binary, octal, hexadecimal. Introduction to micro-processors.
- (b) Fortran IV language :
 - (i) Arithmetic operations and expressions, Real and integer constants and variables. Input/output statements.
 - (ii) Control statements : GO TO, arithmetic IF, logical IF, computed GO TO, DO Loops, Nested DO, Loops.
 - (iii) Subscripted variables: Single, double and multiple subscripts. The Dimension statement.
 - (iv) Sub-routines and Functions : Call statements. Equivalence Common, Data and Block Data Statements. Fortran Functions. Function sub-programmes.
 - (v) Programming of simple problems in Civil Engineering.

(B) System Engineering :

- (c) Basic economic and technological concepts used in decision making. Economic analysis for engineering projects. Production functions. Net-benefit functions and optimality conditions. Economic factors affecting system design. Benefits and costs criteria for project design and selection.
- (d) Introduction to systems and System Engineering. Typical examples of Civil Engineering systems. Decision making. Decision under certainty, under risk and under uncertainty.
- (e) Optimization methods : Mathematical form of the general optimization problem. Linear Programming. Simplex method. Duality theory. Application of linear programming to Civil Engineering systems. Summary of other optimization methods. An elementary idea of simulation.

4. SURVEYING-I

1. Survey Instruments and Equipments :

Different types of tapes and chains and their uses. Constructional details and operation of prismatic compass, Dumpy level, Vernier theodolite. Principle and use of gradiometer, Surveyor's compass and Aneroid barometer.

2. Traverse Surveying :

Different types of traverse surveying, magnetic north, true north, declination, dip, bearings, local attraction, loose needle and fast needle, measurement of horizontal and vertical angles, computation of different types of traverses. Graphical and Analytical methods of traverse adjustment, sources of errors in theodolite and tacheometric traverses. Area of closed traverse using latitudes and departures.

3. Levelling :

Definition of various terms in levelling, different types of levelling, sources of error in levelling, curvature and refractions. Permanent adjustment of Dumpy level and vernier theodolite.

Precise levelling, Orders of precision, Equipments for Geodetic levelling, Field procedure of Geodetic levelling, computation and adjustment of levels.

4. Tacheometry :

Elements of tacheometry, subtense method & tangential tacheometry.

5. MECHANICS OF STRUCTURES

1. Force Systems: Force and its specifications: vector quantity: composition and resolution of forces: equilibrium of forces: free body diagrams: equations of equilibrium for force system in a plane and three-dimension.

Closed force polygon and closed funicular polygon: distribution of force in a plane: intensity of uniform, triangular and parabolic distributions: statically determinate and indeterminate systems.

Friction: Laws of friction, coefficient of friction, static friction, kinetic friction, angle of obliquity, angle of friction, cone of static friction.

2. Stress and Strain: Hook's law, tension, Compression and shear, complementary shear stress. Poisson's ratio, Elastic

constants and their relationship for an isotropic material, temperature stresses and composite bars. Resilience and suddenly applied loads, ultimate strength. working stress.

3. Principal planes, principal stress and principal strains. Mohr's circle diagram, ellipse of stress, strain energy in terms of Principal stresses. theories of failure.
4. Stresses and strains in thin cylinders and thin spherical shells. Thick cylinders subjected to internal and external pressures, compound cylinders distribution of stresses, initial difference of radii at junction, thick spherical shells.
5. Pinjointed frames, Deficient, perfect and redundant frames. simple, compound and complex frames. Determination of reactions at supports: Determination of forces in the members of simple plane framed by method of joints, method of sections and graphical method.
6. Rivets and Riveted joints. Rivet value, minimum and maximum pitches, safe edge distances, splicing, efficiency of a joints. Eccentrically loaded joints.
7. Rectilinear motion: Newton's laws of motion, general equation of motion of a particle, differential equation of rectilinear motion. Free vibrations, differential equation for general solution, amplitude of vibration, period of vibration, frequency of vibration, D'Alambert's Principle.
8. Lifting Machines—Mechanical advantage, velocity ratio and efficiency: Law of machine, Effort lost in friction, Reversal of a machine. Pulleys and pulley blocks. worm and worm wheel, winch crab—single and double, wheel and differential axle, screw jack—differential, compound and worm geared, compound efficiency. Elementary idea of power transmission by belts.
9. Columns: Long and short columns: Slenderness ratio: Ideal strut: Euler's formulae for crippling load: Various end conditions; Equivalent length of a strut: Stresses in columns carrying axial and eccentric loads, columns with initial curvature and laterally loaded columns; empirical formulae—Parabolic. Straight line. Rankine's Secant & Indian Standards.

6. STRENGTH OF MATERIALS AND THEORY OF STRUCTURES

1. Moment of inertia—mass and area. Radius of gyration; moment of inertia of symmetrical, unsymmetrical and built up sections. Theorems of moment of inertia—Parallel axis theorem. Polar moment of Inertia, Product of Inertia, Principal axes.

2. Elasticity and plasticity, behaviour of common materials in tension and compression. Characteristic stress—strain curves of engineering materials. Measurement of ductility—Unwin's method based on reduction of sectional area, Hardness, impact and fatigue testing.
3. Bending moment and Shear force diagrams for cantilevers, Simply supported, overhanging and determinate compound beams subjected to static loads—concentrated, uniformly distributed and uniformly varying.
4. Stress in beams—theory of simple bending, section modulus, distribution of normal stress due to bending, composite beams, shear stress distribution in rectangular, circular T-and-I-Sections.
5. Relation between load, shear force, bending moment, slope and deflection; slopes and deflections of cantilevers and simply supported beams by Macaulay's method, moment-area method, conjugate beam method, strain energy method—unit couple method and unit load method. Deflection due to shear, plate springs.
6. Combined bending and direct stresses. Eccentric loading, Middle third rule, Kern of a section.
7. Statically indeterminate structures—Degree of indeterminacy. Analysis of propped cantilevers by the method of consistent deformation and moment area method. Fixed beams—Fixed end moments, bending moment and shear force diagrams for static loading, effect of sinking and rotation of a support. Continuous beams, analysis of continuous beams by three moment theorem, effect of sinking of a support.
8. Torsion shear stress in solid and hollow circular shafts, angle of twist, power transmitted by a shaft under stresses, effect of end thrust, stress and deflection of close coiled helical springs.
9. Rolling loads and influence lines—Rolling loads on beams, shear, forces and bending moments due to concentrated loads, uniformly distributed loads longer and shorter than the span, graphical method, equivalent uniformly distributed load. Influence lines for shear force, bending moment, for simply supported beams and for forces in members of statically determinate plane frames (Simple cases).

7. FLUID MECHANICS (C)

1. Fluids—Definition: Ideal Fluids, Real Fluids, Newtonian and non-Newtonian Fluids.

2. Properties of fluids—Units of measurement. Mass Density. Specific weight. Specific volume. specific Gravity. Viscosity, Surface tension and capillarity. Compressibility & Elasticity.
3. Hydrostatics—Pressure at a point in a static fluid. pressure variation in an incompressible static fluid: Atmospheric pressure. Gauge pressure, Vacuum pressure. Absolute pressure. Manometers. Bourden tube pressure gauge. Forces acting on immersed plane surface. centre of pressure, forces on curved surfaces.

Buoyancy—conditions of equilibrium of floating bodies Metacentre and Metacentric height. Experimental and Analytical determination of metacentric height.

Relative Equilibrium—Fluid masses subjected to horizontal and vertical accelerations and uniform rotation.

4. Hydro-Kinetics Types of flows—Steady and Unsteady, Uniform and Non-Uniform. Stream lines, Path lines. Stream. tubes, Principles of conservation of mass—Equation of continuity, Acceleration of Fluid Particles—Local and convective Rotational and Irrotational motions, Free and forced vortex. circulation and Vorticity, Velocity potential and stream function. Elementary treatment of flownet, Source and sink.

Euler's equations of motion and integration of Euler's equations, Bernoulli's equation for incompressible fluids—Assumptions in Bernoulli's equation, Energy correction factor.

5. Applications of Bernoulli's Equation—Pressure distribution in irrotational flow, Pitot tube. Venturimeter, Orifice meter, Orifices. Time of emptying tanks by orifices.

Sharp edged Rectangular, Triangular and Trapezoidal notches Francis formula. Velocity of approach, End contractions. Cippolatti weir, Time of emptying reservoirs by weirs.

6. Momentum Equation and its application—Development of momentum equation by control volume concept. Momentum correction factor. Applications—Borda's mouth pieces. Sudden enlargement of flow. Pressure on flat plates. Nozzles.

7. Flow in pipes : Laminar flow. Reynolds experiment. Relation between shear and pressure gradient. Transition from Laminar to turbulent flow.

Turbulent flow—Laws of fluid friction. Friction factor. Moody diagram. Loss of head due to friction and other causes, Hydraulic gradient. Total energy line. Chezy's Darcy's and

Manning's formulae, Flow through parallel pipes and pipes in series, Flow through branched pipes, Flow along a bye-pass, Power transmission through pipes, Condition for maximum power.

8. Flow in open channels. Resistance equation most economical rectangular and Trapezoidal sections.
9. Elementary concept of boundary layer theory, Forces on immersed bodies- Drag and lift flow past a cylinder, a flat and an airfoil. Drag & lift coefficients.

8. ENGINEERING GEOLOGY (C)

Section-A

Introduction : Object and scope of Geology. Earth crust.

General Geology : Weathering and their agents, geological work of rivers. Earthquake and Volcanoes. Introduction to environmental geology.

Mineralogy : Physical properties of minerals. such as quartz, orthoclase, muscovite, biotite, tourmaline, hornblends, albite and augite, and their applications in Civil Engg. Use of microscope.

Petrology : Formation, origin and classification of sedimentary, metamorphic and igneous rocks, their uses as construction and road materials.

Historical Geology : Elementary principles of stratigraphy standard stratigraphic scale and details of Aravalli, Delhi and Vindhyan Systems. Occurrence of building and construction materials in the India.

Section-B

Structural Geology : Dip, strike, beddings, out crops, folds, faults and their classification origin and recognition unconformity outlier and inlier, sill, laccolith, batholith, stock, boss, dyke, current bedding, graded bedding, ripple marks, over-lap and off-lap.

Engineering Geology : Importance of geology in Civil Engineering. Geological investigations and their influence on the selection, location and type of dams, reservoir, tunnels and piers, precaution and treatment against faulting, folding beddings, joints, porosity and permeability and ground water conditions. Land slides and hill slopes. Construction of roads in hilly area and precaution and treatment against various structures.

5. *Oscillators* : Operation of basic types of inductance and capacitance oscillators.

6. *Elements of Computer Engineering* : Analogue versus Digital computers; Block diagram of Digital computer; Block diagram of microprocessors.

7. *Electronic Measuring Instruments* : General principle of electronic voltmeters; and cathode Ray Oscilloscopes. Principle of Measurements of Non-electrical quantities.

OR (iii) Mechanical Engineering Practice for Civil Engineers

(A) *Power Generation* : Thermal and Nuclear systems. Descriptive study of steam power plants and the accessories like ash handling, coal handling, cooling tower, turbine system etc. Descriptive study of diesel and nuclear power plant. Comparative study of various types of power plants. Economics of power generation.

(B) *Automobile Engineering*:

1. Automobile : History of development, types, Resistance to motion and power requirement for propulsion, acceleration and gradient.
2. Prime movers: Types, basic construction, operation performance of surface vehicles, Broad classification of prime movers of Indian atomic petrol and diesel engines. Modern trends in use of prime movers.
3. Electrical Ignition System: Magneto, coil ignition. Distributor. Electro ignition system. Spark plugs, trouble shooting.
4. Transmission system : Clutch, Gear Box. Two wheel and four wheel drive. Front wheel and rear wheel drive.
5. Brakes: Classification and function, Main types of braking system. Mechanical, Hydraulic and Pneumatic. Drum and Disc type brakes. Emergency braking and power assisted brakes.
6. Tyres: Types, wear and causes.

(C) *Compressors*: Descriptive study of reciprocating compressors. Single and multicylinder compressors. Uses of Pneumatic power: examples from civil engineering industry.

OR - (iv) Advanced Mathematics (C).

1. *Statistics* : Frequency distributions--classification, tabulation and graphical representation of statistical data, measures of

central tendency and dispersion, elementary theory of probability, theoretical distributions—Binomial, Normal, Poisson, Chi-square, lognormal, extreme value; elements of sampling theory, Chi-square—test of goodness of fit.

Curve fitting, method of least squares, bivariate distribution, linear regression and correlation.

2. *Transform calculus* : Laplace transform with its simple properties, applications to the solutions of ordinary and partial differential equations having constant coefficients with special reference to the wave and diffusion equations.

3. *Tensor Analysis* : Definition of a tensor, transformation of coordinates, contravariant and co-variant vectors, addition and multiplication of tensors, contraction of tensors, inner product, fundamental tensor, Christoffel symbols, covariant differentiation.

SECOND YEAR

(Electrical Engineering)

1. Mathematics Paper III (E) :

(a) *Differential Equations*:

Ordinary differential equations of second order with variable co-efficients, variation of parameters, solution in series.

Partial differential equations of first order, Lagrange's methods, standard forms, Charpit's method.

Method of separation of variables—applications to the solution of wave equation in one dimension, Laplace's equation in two dimensions, diffusion equation in one dimension.

(b) *Special Functions*:

Bessel's differential equation. Bessel functions of first and second kind, simple recurrence relations, orthogonality property of Bessel functions.

Legendre's differential equation, Legendre's function of first and second kind, simple recurrence relations, Rodrigues formula, orthogonality property of $P_n(x)$.

(c) *Transform Calculus*:

Laplace transform with its simple properties, applications to the solution of ordinary and partial differential equations having constant co-efficients with special reference to the wave and diffusion equations.

(d) *Numerical Analysis :*

Finite Differences--Forward, backward and central differences, Newton's forward and backward difference interpolation formulae, Stirling's formula, Numerical Differentiation and Integration.

Solution of ordinary differential equations of first order by the methods of Picard, modified Euler. Milne and Runge-Kutta (fourth order method)

(e) *Fourier Series:*

Expansion of simple functions in Fourier series, Harmonic Analysis.

Paper 2 : ELECTRICAL ENGINEERING MATERIALS :**A. THEORY :***Atomic Structure and Periodic Table:*

Bohr's atomic model, quantum number of electronic configuration of the atom, periodic classification of the elements.

Interatomic and Periodic Table:

Ionic bond, covalent bond and metallic bond, electronegativity, Vander Waal's forces.

Band Theory of Solids: Brillouin Zones:

Wave functions of electrons in periodic lattices, E. Vs. K. relationship. Brillouin zones and energy bands.

Electrical Properties:

Conductors, Insulators and semiconductors. Dielectric and Superconducting properties.

Magnetic Properties:

Basic concept magnetisation and hysteresis: Dia, para and ferromagnetism.

B. APPLICATIONS:

Materials used for high conductivity, high resistivity, electrical contacts, cables and wires. Semiconducting materials. Plastics: Gaseous, liquid and solid dielectric materials. Hard and soft magnets; ferrites.

Joining of Metals:

Welding, brazing and soldering.

3. COMPUTER METHODS (E)

(i) *Computer Programming (Fortran IV Language):*

Arithmetic operations and expressions, real and integer constants and variables, input/output format statements.

Unconditional GO TO, computed GO TO, assigned GO TO, arithmetic IF, logical IF, DO loops and continue statements.

Subscripted variables, dimension statement. Arithmetic statement functions, function sub-programme, subroutines and call statement.

(ii) *Computer Oriented Numerical Methods:*

Solutions of non-linear equations in one variable by the methods of regula-falsi and Newton-Raphson, solution of simultaneous algebraic equations by Gauss' elimination method and Gauss-Siedel method, curve fitting and the method of least squares, solution of ordinary differential equations by Runge-Kutta fourth order method, solution of partial differential equations with special reference to heat equation, Laplace equation and wave equation.

Paper 4—Electronics I :

1. Electron Ballistics: Motion of Electrons in Uniform Electric field and uniform Magnetic Field. Motion of Electrons in parallel and crossed electric and magnetic fields.

2. Electron Emission: *Elementary Ideas* about thermionic emission, secondary emission, field emission and photo emission.

3. Electron Tubes: Basic ideas about construction and characteristics of diode, triode, tetrode, pentode, photo tube and Cathode Ray Tube Gas diodes. Thyratrons & Ignitrons.

4. Basic Semiconductor Physics & Devices : Semi conductors, Energy Level in Semi conductors, N & P semiconductors. P—N Junction, B.J.T.: U.J.T., F.E.T. & S.C.R.

5. Rectifiers : Operation and Analysis of half wave and full wave rectifiers using vacuum and gas tubes. Approximate analysis of rectifier filters.

6. Basic Vacuum Tube Amplifiers : Simple Equivalent circuits : classification of amplifiers: Graphical analysis, grounded

cathode, grid and plate amplifiers. Analysis of R—C coupled amplifiers. Discussion of other Audio Frequency voltage amplifiers.

7. **Basic Transistor Amplifiers** : Graphical Analysis, parameter transistor equivalent circuit, common emitter, common base and common collector amplifiers, Transistor Bias and stabilization, R—C coupled common emitter amplifier, F.E.T. Amplifier.

8. **Untuned Power Amplifiers** : Analysis of Class A vacuum tube power amplifiers; Class A vacuum tube and transistor push pull amplifier.

Paper 5 : Circuit Analysis I

1. *Introductory* : Introduction to circuit elements and their characteristics; Current and voltage reference. Ideal and Physical current and voltage sources. Source transformation.

2. *Single-phase circuits* : Applications of complex quantities to circuit Analysis. Response of single element, double element and triple element circuits. Locus diagrams and Inversion.

3. *Network Analysis* : Basic Topological consideration tree, minimum number of independent loop current and node voltages. Network voltages. Kirchhoff's Laws. Mesh and node systems of network equations and their comparison. Duality-method of obtaining dual network.

4. *Network Theorems* : Star-delta conversion. Thevenin's Norton's Superposition, Reciprocity, Compensation and maximum power transfer theorems.

5. *Polyphase circuits* : Generation of 3-phase supply. General circuit relations, three phase star, three phase delta, star and delta combination. four wire star connection, balanced three phase voltages and unbalanced impedance. Apparent or complex power, power and reactive volt-amperes in a 3-wire system. Two wattmeter method of power measurement.

6. *Non-Sinusoidal Waves* : Complex periodic waves and their analysis by Fourier series, different kinds of symmetry, determination of co-efficients. average and effective values of a non-sinusoidal waves, power in a circuit. of non-sinusoidal waves of current and voltage, form factor, equivalent sinusoidal wave and equivalent power factor. Response of linear networks to non-sinusoidal periodic waves. The Fourier Integral.

Paper 6 : Electrical Machines I

1. *Electromechanical Energy Conversion* : Basic aspects and physical phenomena involved in Energy conversion. Energy balance. Basis of operation of Electric Generators and Motors.

2. *D.C. Machines* : Construction. Armature Windings—ring and drum windings. Simple lap and wave windings. Chording. Equalising Connections. Generated voltage.

Armature reaction. Distribution of Armature and Field m.m.f. Cross magnetising and demagnetising mmfs and their approximate estimation. Commutation. Reactance voltage. Resistance Commutation. Interpoles.

Types of d.c. generators. No load and load characteristics of d.c. generators. Parallel operation.

D.C. Motors. Production of Torque. Back emf. Torque current and Torque-speed characteristics of motors. Starting of Motors Speed Control by variation of armature voltage and field. Ward Lenard Method.

Losses and efficiency. Direct and Indirect tests. Swinburne's test. Hopkinson's test, Field's test and Retardation test. Separation of Losses.

3. *Transformers* : Constructional features. Emf. equation. No load and load conditions. No load current waveshape. Ideal transformer. Equivalent circuits. Vector diagrams. O.C. and S.C. tests. Efficiency. Voltage Regulation. Effect of Frequency. Parallel operation Autotransformers. Switching currents in transformers.

Polyphase transformer. single unit or bank of single phase units. Polyphase connections. Phase conversion. 3 to 6 phase and 3 to 2 phase.

Paper 7 : Electrical Measurements

1. *Classification* : General considerations of deflection. control and damping. Equation of motion. Construction and principle of operation of -D'Arsonval. Ballistic and vibration galvanometers. Flux Meters and Megger. Induction voltmeter. ammeter. Power factor-meter. synchroscopes. frequency meters.

2. *Power and Energy Meters* : Induction and Electrodynamic wattmeters. Wattmeter errors. Single phase Energy meters. their errors and compensation. Maximum demand indicators.

3. *Polyphase Metering* : Blondel's theorem for n-phase p wire system. Measurement of power and reactive KVA in 3 phase balanced and unbalanced circuits.

4. *Potentiometers* : Principle of operation of direct reading D.C. potentiometers. construction. standardisation. Use for the measurement of voltage. resistance and current Principles of a.c. potentiometers. Polar and coordinate types. construction standardisation. Use for measurement of resistance.

5. *Measurement of Resistance* : Methods of Measurement of low, medium and high resistance. Surface and volume resistivity. Price Guard Wire method, loss of change method.

6. *A.C. Bridges* : Generalised treatment of four arms A.C. bridges, Sources and detectors, Maxwells inductance – Capacitance bridge, Anderson bridge, Heaviside bridge, Schering bridge, Wein's bridge. Sources of errors in bridge measurements. Screens and Wagner earth.

7. *Instrument transformers* : Theory and construction of current transformers and potential transformers. Ratio and phase angle errors. Effects of variation of power factor, secondary burden and frequency. Tests for ratio and phase difference.

Paper 8 : Generation of Electrical Power

1. *General Introduction* : Power Generation Plants. Conservation of natural fuel resources, different types of fuels and their efficiencies. Choice of fuel. Transport of fuel or of electrical energy.

2. *Sources of Energy and Prime Movers* : Methods of bulk energy generation :—Thermal, hydros, diesel and nuclear power sources, comparison of sources of power, Elementary idea of other sources of energy e.g. electrochemical, thermocouples, piezo-electric and electrostatic.

3. *Main parts of a power system* : Power stations-electrical equipment of power stations : substations—purpose and general classification. Function performed by substations; General idea of distribution systems.

4. *Load Survey* : Types of electrical load, connected load, maximum demand, demand factor, load curve, average and maximum on a power station. Diversity of load duration integrated load duration curves and their use in determining base and peak loads.

5. *Costs of various types of stations* : Fixed and running charges—Interest, taxes, insurance, depreciation, fair return on investment. Physical and functional depreciation, salvage or scrap value, removal cost, net depreciation. Different methods of accounting for depreciation, straight line, sinking fund and retirement reserve methods; influence of maximum demand, load factor, diversity factor and capacity factor or economic operation of generating stations.

6. *Energy costs* : Principles of rate making. Types of tariff :—flat rate, sliding scale, two part, Effect of power factor. Power factor tariffs : Maximum KVA demand, power factor penalty clause, reactive tariff. Other factors influencing tariff.

7. *Safety of Electric Installations* : House wiring, Indian Electricity regulations, Electric safety.

Paper 9— Elective (B) :

HYDRAULICS AND WATER POWER ENGINEERING

- A. *Basic Hydraulics* : Definition of fluid and properties of fluids. Hydrostatics total pressure and centre of pressure of flat surface. Simple types of monometers. Uniform, and non-uniform, steady and unsteady flows. Free and forced vortex. One dimensional continuity equation, Bernoulli's theorem. Flow through pipes, loss of head due to friction and other causes, Darcy's formula, hydraulic gradient and total energy. Manning's and Chezy formulae for velocity in open channels. Elementary idea about waterhammer and cavitation.

Momentum Equation: Impact of jet on a moving or stationary, flat or curved vane. Elementary application to rotodynamic machines.

Hydrology : Hydrologic cycle. Precipitation and its measurement, average precipitation. Runoff and its measurement by various empirical formulae, tables, flood formulae. Flow duration curves.

- B. *Water Power*: Assessment of available water Hydropower e.g. load factor, capacity factor, load duration curves wheel capacity. Introduction of various types of hydro-power, plant viz. run-of-river, storage tidal and pumped-storage. Some Indian examples. Comparison of water with other energy resources. Relative merits.

Hydel Structures and Turbines: Elementary descriptive information about types of dams and forces encountered therein, spillways and their types, surge tanks, conduits. Turbines and their types. Main dimensions for Pelton wheel, Francis, Kaplan and Propeller turbines. Efficiency of turbines Governing of impulse and reaction turbines. Basic performance characteristic of turbines. Selection of turbines for hydro-projects.

Paper 9—Elective (C) —Mechanics of Structures:

Note :—The portion will be based on direct simple application of following topics useful to field and design engineers in electrical branch.

Stresses and strain —Hooke's law; Tension; Compression and shear; complementary shear stress; Poisson's ratio; Elastic constants and their relationships for an isotropic material. Temperature stre-

sses; composite bars; Elastic and plastic behaviour of common materials in tension and compression; characteristic stress-strain curves; Resilience and suddenly apply loads, Ultimate strength. Working stress and factor of safety.

Bending moment and Shear force diagrams for cantilevers, simply supported, overhanging and determinate compound beams subjected to static loads - concentrated, uniformly distributed and uniformly varying.

Stresses in beams—Theory of simple bending; section modulus; Distribution of normal stress due to bending; composite beams; Shear stress distribution in rectangular, circular, T-and I-Sections.

Relation between load, shear force, bending moment, slope and deflection; Slopes and deflections of cantilevers and simply supported beams.

Combined bending and direct stresses. Eccentric loading; Middle third rule, Kern of a section.

Principal planes, stresses and strains; Mohr's circle diagram.

Torsion-shear stress in solid and hollow circular shafts; Angle of twist; Power transmitted by a shaft under stresses; Effect of end thrust, stress and deflection of close coiled helical springs.

Columns, Long and short columns; Slenderness ratio; Ideal strut; Euler's formulae for crippling load; Various conditions; Equivalent length of a strut.

Design principles and application in cables, Prestressed poles, Transmission towers and foundations for various structures.

MECHANICAL ENGINEERING

Paper I. Mathematics III (M) (2L-IT) M. Marks-100

(a) *Differential Equations :*

Ordinary differential equations of second order with variable co-efficients, variation of parameters, solution in series.

Partial differential equations of first order, Lagrange's method, standard forms, Charpit's method.

Method of separation of variables—applications to the solution of wave equation in one dimension, Laplace's equation in two dimensions, diffusion equation in one dimension.

(b) *Statistics & Probability :*

Elementary theory of probability, Expected value, theoretical probability distributions—Binomial, Normal, Poisson distributions.

(c) *Transform Calculus:*

Laplace transform with its simple properties, applications to the solution of ordinary and partial differential equations having constant co-efficients with special reference to the wave and diffusion equations.

(d) *Numerical Analysis:*

Finite differences—Forward, backward and Central differences, Newton's forward and backward difference interpolation formulae, Sptirling's formula. Numerical Differentiation and Integration.

Solution of ordinary differential equations of first order by the methods of Picard, modified Euler, Milne and Runge-Kutta. (fourth order method).

(e) *Fourier Series:*

Expansion of simple functions in Fourier Series, Harmonic Analysis.

Paper II PRODUCTION MATERIALS & PROCESS

1. Ferrous Metals and Alloys : Iron ore, Pig-iron, Blast furnace market forms of supply of pig irons. Standard grades composition and applications of cast-iron, cast iron alloys wrought from carbon and alloy steels, tools steels, die-steels, stainless-steel heat resistant steels, and super alloys. Effect of alloying elements. I.C. code for designating steels SAE method of coding steels.

2. Non-ferrous Metals & Alloys : Classification. Important alloys of copper Lead. Aluminium Nickel, Tin. Magnesium, their composition and applications. Bearing metals Ceramic materials glasses and refractories. abrasives and silicones. Composite materials—fire reinforced and cermets Adhesives, their characteristics, bondings and applications, laminating plastics.

3. Heat Treatment : Introduction and purpose of heat treatment. Alloyropy of iron Fe, Fe-C diagram, significance of various areas in it. Temp-time diagram for FEC alloys. Critical cooling rate, transformation during continuous cooling. Grain size in Spheroidising, tempering, austempering. S-curve maxtempering martensitic transformation hardening. determination of hardanability, case-hardening induction hardening, flame hardening nitriding. Nitriding, and quenching. Major defects in steels due to faulty heat treatment their courses, precautions and controls. Heat treatment of cutting tools and machine components.

4. Moulding : Patterns for moulding types, allowances and materials used for patterns. Master patterns. Design considerations in patterns. Core prints. Core boxes. Moulding materials moulding sand. Characteristics and constituents of moulding sand preparations and conditioning, sand testing grain fineness, moisture content, clay content and permeability tests. Core sands and core binders. Classification of moulds, various moulding processes. Shellmoulding. Machine moulding. Defects in machine moulding. Cores and core making. Types of moulding machine—Jar or Jolt machines. Squeezer machines. Jolt squeezer machines. Sand aling alingers. Diaphragm moulding machines. Pattern drawing machines.

5. Casting Tubes: Sand casting, investment, dia. centrifugal and slush casting. Pleaster mould and permanent mould castings. Continuous casting, malleable casting. Design of castings. Casting defects. Melting furnace constructional and operational feature of cupola, rotary, crucible and Electric furnaces. Mechanisation of foundries.

6. Power Metallurgy and Surface Treatment: Power metallurgy—Power manufacture, mechanical pulverisation, electrolytic process, chemical reduction, atomisation, properties of metal powders, fabrication methods compacting of powders, sintering. Applications, advantages and disadvantages of power metallurgy, Surface treatment coatings and metal spraying hot dipping, galvanising, tin, plating, lead coatings, metalcladding diffusion, chroma diffusion, anodising, and blasting and tumbling, chemical cleaning.

7. Manufacturing processes: Survey of manufacturing processes. Hot and cold rolling, pipe and tube production, extrusion, piercing hot spinning, and hot pressing Forging—methods of forging, forging hammers and presses, principle of forging tool design. Cold working processes—shearing drawing squeezing, cold heading, riveting thread rolling, bending and forming operations.

8. Joining Process : General classification of welding operations, survey of electric resistance welding. Oxyacetylene gas welding and cutting arc welding and thermit welding processes. Equipment for oxyacetylene gas welding and Arc Welding processes. Welding technique. Special welding processes—TIG MEG. Gas Metal Arc: Mig-Arc, Stud. Atomic Hydrogen. Ultrasonic, Electron Beam, Laser Beam. Friction and Explosive welding processes. Welding of castiron and Aluminium. Welding defects. Soldering, Brazing, their applications, and limitations.

Reference Books :

1. Production Technology by R.K. Jain.
2. Elements of Workshop Technology Vol. I by S. K. Hajara Choudhary.

Paper III COMPUTER METHODS FOR MECHANICAL ENGINEERING APPLICATIONS

1. Introduction to computers, computer organisation, Input/output, Memory, Arithmetic unit, control unit. Binary system, Storage area.

2. Fortran IV language :—

- (i) Arithmetic operations, Real & integer constants and variables, Input, output statements, Format Statements, for integer, real and exponent field specifications, carriage controls.
- (ii) Control statements : GO TO, arithmetic and logical IF, computed GoTo, DO loops, Nested DO loops.
- (iii) Logical Statements.
- (iv) Subscripted Variables : Single, double and multiple subscripts, Dimension statement.
- (v) Subroutines and Functions : Call statement Equivalence common, Data statements, Fortran functions, function subprogrammes.

3. Numerical Methods :

- (i) Solutions of systems of equations : Linear iteration, Newton Raphason method, Newton's method for systems of equations, polynomical equation with real and complex roots.
- (ii) Numerical integration: Trapezoidal, Simpson's formulae, gaussian quadrature.
- (iii) Numerical solutions for ordinary differential equation through Taylor's series, Runge-Kutta methods, Adam Bash method, Predictor corrector methods.
- (iv) Matrix Methods : Inversion, Gaussian Elimination, Tri-diagonal matrix, eigen value problems.
- (v) Numerical solution for boundary value problems through Finite difference methods.

Candidates are expected to write simple computer program for these methods. They shall also be conversant with flow charts for the above.

Paper IV APPLIED SOLID MECHANICS

1. Stress and Strains : Hooke's law, tension, compression and shear, complementary shear stress, poisson's ratio, Elastic cons--

tants and their relations for an isotropic materials. Temperature stresses and composite bars. Elastic and plastic behaviours of common materials in tensile and compressive test. Characteristic stress strain curves for metallic and non-metallic materials. Ultimate strength, working stress and factors of safety. Resilience and suddenly applied loads. stress concentration.

2. Stress-es in Beams : Bending moment and shear force diagrams of freely supported, cantilever and fixed beams under static loading of different types. Bending stresses—Theory of simple bending, Moment of Inertia and Section modulus of and shear stress distribution in rectangular, circular hollow circular, I Box., channel, Tee and angle sections. Simple cases of combined bending and axial stresses. Applications shafts levers etc.

3. Deflection of Beams & Shafts : Relation between deflection slope, bending moment, shear force and load. Transverse deflection of beams and shafts under static loading. Torsional shear : Stresses in solid, hollow and stepped circular shafts. angular deflection and power transmitted. Applications shafts couplings etc.

4. Springs : Plate springs, leaf spring, Belleville springs, stress and deflection of closely coiled, circular and square section springs of different types with Wahl's factor Helical tension and compression springs, torsion bar and springs.

5. Columns : Long and short columns, ideal strut, Euler's formulae for crippling loads and conditions and equivalent length of struts. Empirical formula for the design of compression members with special reference to Rankine Formula. Applications connecting on Piston rod, power screws etc.

6. Principal Planes, Stresses & Strains : Maximum, normal and shear stresses, Ellipse of stress, ellipse of strain and momental ellipse. Neutral axis Mohr's circle diagram. Theories of failure applied in mechanical engineering design. Application. Shafts, brackets etc.

7. Application of variational approach : to determine deflection and stresses in a beam and a plate (Galerkin and Ritz Method).

8. Metal Working Analysis : Elasticity. Yield criteria : Tresca and Von Mises (only). Methods of Analysis : Slip Methods, slip lines and energy methods in the processes like drawing extrusion, rolling and forging.

Recommended Books :

1. O.P. Jain & B.K. Jain: Theory & Analysis of structures, volume I. Nem Chand and Bros. Roorkee.
2. Dyn. & Shame : Solid Mechanics A Variational approach.

3. Surender Kumar: Principles of Metal Working, Oxford and IEH Publishing Co.
4. Popu : Intreduction to Mechanics of Solids, Prientee Hall (India).

Paper 5—FLUID ENGINEERING

Introduction : Flued & Flow, properties of Ideal and real fluids, continuum concept Lagrange and Eulerian methods of describing position and motion.

Kinematics of the fluids : Steady uniform flow, stream lines and path lines, continuity equation, stream function, irrotational flow, plot of flow fields, circulation, sources and sinks, doublets.

Dynamics of fluid : Euler's equations, Bernoulli equations, Navier stones equation. Angular momentum, Energy equation, flow measuring devices like vanturimetric, orifice meter, pitot tubes, notches and weir orifices and mouth pieces.

Flow in Pipes & over surfaces : Laminar pipe flow, flow between parallel plate boundary layer concepts Bomb Boundary layer thickness, displacement thickness, momentum thickness, Boundary layer equations. Blasius solution. Drag on flat plate, Boundary layer speparation. Magnus effect and lift.

Gas Dynamics : Velocity of sound Mach Number and mach angle, Isentropic flow, stagnation properties, flow through converging and converging diverging nozzles, normal shock, flow with friction, Fanno line, flow with heating and cooling, Rayleigh line, Hot wire anemometer, Shadow gaph schilieran apparatus, Mach Zender interferometer.

Water Turbines: Classification--Descriptive details of Pelton wheel Francis and Kaplan troubines Relative performance specific speed and speed basis. Load efficiency curves Governing systems, types of governors. Introduction to Penstocks spiral casing, draft tubes and surge regulation pumped storage system.

Centrifugal Pumps : Types constructional details menometric and hydraulic efficiencies, specific speed, characteristics, series and parallel operation.

Axial Flow Pump : Types, constructional details and applications, velocity and pressurc distribution in guide vanes, impeller and diffusion, specific speed, charcterstic curves, surging.

Books recommended :

1. Kumar, K.L. Engineeering Fluid Meehanics, Eurasia 1976.
2. Jagdishlalal : Hydraulic Machines, Metropolitan.

Paper 6—MACHINE DRAWING AND DESIGN

A. *Machine Drawing :*

Assembly and detailed drawings :

1. Machine Tools : Tail stick, tool rest, machine vice, tool head of shaper.
2. Bearings : Ring oiled, Swivel, trust, self aligning rolling bearings.
3. I.C. Engines : Main components like piston, crank shaft, valve gear.
4. Steam safety valve, steam injector, expansion joints of steam pipe.
5. Simple Gear Boxes : Automobiles Machine Tool, reduction and stepless types (Sketches only).

B. *Machine Design :*

1. Fundamental principles of machine design. Metals and alloys commonly used and their main properties. Allowable stresses, Factors of safety with elementary treatment.
2. Design of machine elements subjected to direct stresses like pin joints, cotter joints, keys etc.
3. Design of riveted joints, screw fastenings and welded joints with symmetrical as well as eccentric loading.
4. Design of thin and thick cylinder, covers of different shapes. Boiler shell design with IBR with reference to thickness, mounting, provisions for accessories, openings and their covers.
5. Couplings : Design of rigid and flexible couplings. Rigid : flange and collar type couplings. Flexible : Bush and Hooke joint type couplings.
6. Design of machine elements like shafts and levers under bending and combined stresses using maximum principal stress theory. Tresca theory and Von Mises theory.
7. Design of belts and pulleys, plate clutches and design of brakes.

Note : Equal weightage be given to both parts.

Recommended Books :

1. Laxminarayan and Mathur : Machine Drawing. Jain Brothers. 1916.
2. Parkinson A.C. : Intermediate Engineering Drawing. Shri Isaac Pitman and Sons Ltd; London.

3. Bahl R.C. and Goel V.K. : Mechanical Machine Design Standard Publishers Distributors, Delhi.
4. Pandya, N.C. and Shah, C.S. : Elements of Machine Design, Chartor Book stall.

Paper 7—DYNAMICS OF MACHINERY-I

1. Friction : Solid rolling, dry, greasy and viscous friction. Laws of various types of friction, inclined plane simple and compound screw jacks.

2. Wear : Mechanism of wear Adhesion, abrasion. diffusion, cavitation. Fatigue, Krishov's equations. Assessment of war, pitting, spalling, burnings, scorings and scruffing.

3. Lubrication : Raynold's equation for lubrication, Effects of Lubrication of friction, Types fo lubrication, selection of lubricants.

4. Friction of pivots and collars : Single disc, multiple disc, centrifugal and electro magnetic types of clutches Friction circle and friction axis. Mitchell thurt, beaing. Principle of ball, needle and roller bearings. Energy absorbed in bearing.

5. Kinematics : Analysis of machine--elements, pairs, mechanisms and machines. Quardvatic chain and its inversion, Slider crank chain and its inversion, double slinder crank chain and its inversion. Velocity and acceleration diagramme. Instantaneous centre centrode and exode. Coriolis components, Klein's construction.

6. Power Transmission : Belts and Ropes. Centrifugal tension and its effect on power transmission creep consideration. Chain : Variation inspeed ratio Hydraulics drive, Torque convertor.

7. Brakes : Types, Bank brakes, block brakes (external contracting and internal expending types), band and block brakes, Braking action.

Dynamometers : Absorption transmission type. The prony brake, rope brake and hydraulic dynamometers. The swinging field. epicyclictrain, belt transmission and torsion dynamometers.

8. Gear trains : Epicyclic gear trains including sun and planet machanism, Humpage's gear and Preselective gear box for automobiles.

Recommended Books :

1. Theory of Machines—By Pandya and Shah.
2. Theory of Machines : By J.M. Shah.
3. Theory of Machines : By Thomas Bevon, Longman publications.

Paper 8—TECHINICAL THERMODYNAMICS-I

Fundamental Concepts : P.E. and K.B. Internal Energy Systems—open and closed, homoeues and heterogeneous, flow and non-flow. Property. State and process. Working substance. Diffinition of ideal gas, real gas and vapour. Heat change and work done in on-flow and flow system. Work and power.

Zeroth Law : Zeroth Law. Temperature and its measurement. Temperature scales.

PVT Relationships : P.V.T., relationship for an ideal gas and real gases. Vander Vall's equation. PVT Surface. Compressiblity factor. Principle of corresponding state. Use of generalised compressibility chart.

First Law : First law and the closed systems. Energy Balance. Internal Energy Enthaply and specific heats, cyclic processes first law and the open system, General energy equation for one dimensional steady flow.

Second Law : Kelvin, plank and clausius statement. Reversibility reversible processes. Carnot cycle, corolaties in enthalpy, internal energy and entropy in ideal gas processes Clausius inequality.

Kinetic Theory of Gases : Volumetric heat, decrease of freedom of gas molecules, pressure of gas effect of temperature on molecular heat, variation of internal energy with molecular heat. Temperature at completion of combustion.

Thermodynamics Processes on Steam : Change in enthalpy : entropy and condition of steam during thermodynamic processes. Work done.

Gas Power Cycles : Ideal cycles Carnot cylce Otto, Diesel. Dual combustion, joule, Sterling, Eriesson : Atkinson and Brytion cycles. Air standard efficiency. Effect of variable specific heat. Thermal efficiency. Applications.

Vapour Power Cycles : Steam carnot cycle. Rankine cycle. Modified Rankine cycle. Reheat cycle, multistaging, reheat factor, feed heating, regenerative feed heating binary vapur cycle. Thermal efficiency, applications.

Reversed Gas Cycles : Application to refrigeration and heating Reversed carnot cycle. Co-efficient of performance. Bell Coleman cycle. heat pump cycle. Units of refrigeration.

Books for Reference :

1. Gupta, C.P. and Rajendra Prakash : Engineering Thermodynamics, Nemchand, 1975.
2. Mathur, M.L. and Gupta S.C. : Thermodynamics for Engineers, Metropolitan, 1975.

Paper 9—Elective—any one of the following :—

Paper 9(a)—AUTOMOBILE ENGINEERING

The Automobile : History of development, types. Resistances to motion and power requirement for propulsion, acceleration and gradient.

Automotive Electrical System : Battery construction, charging and testing, lighting and wiring system. Electrical instruments : head lamp, electric horn, fuel level indicator, ammeter. Magneto and coil ignition systems, distributor, spark plug.

Transmission System : Clutch : single plate, multiplate, cone diaphragm, semicentrifugal, centrifugal, electromagnetic, vacuum and hydraulic clutches. Fluid Coupling. Gear Box : Sliding mesh, constant mesh, synchromesh and epicyclic gear boxes. Automatic transmission system : hydraulic and torque converter. Overdrive. Propeller shaft, universal joints, final drive, differential. Rear axle drives : Hotchkiss and torque tube drives. Rear axle types. Two wheel and four wheel drive.

Running System : Types of wheels and tyres. Type construction, tyre inflation pressure, tyre wear and their causes. Repair of the tyre and tube. Steering system : Steering gear boxes, steering linkages, steering mechanisms, under and over steering. Steering geometry : effect of camber, caster, king pin inclination, toe-in and toe-out. Power steering : integral and linkage types. Suspension system : objects and requirements, suspension springs, front and rear suspension systems. Independent suspension system. Shock absorber.

Brakes : Classification and function. Mechanical, hydraulic, vacuum, air and self energizing brakes. Brake shoes and lining materials.

Frame and Body : Layout of a chassis. Types of chassis frames and bodies, their constructional features and materials.

Elective 9 (b)—Electronics and Instrumentation (Mech.):

1. *Electron Tubes* : Elementary ideas about electron emission, Operation and characteristics of diodes, triodes, pentodes, photo tubes and cathode Ray Tubes.

2. *Transistors and semi-conductors* : Basic ideas about semi-conductors, P-N Junction Diodes, P-N-P Junction Transistors. Silicone Controlled Rectifiers.

3. *Basic Amplifiers* : Simple Equivalent circuits, classification of amplifiers, Analysis of P-C coupled amplifiers: Elementary idea about other amplifiers. Elementary idea about Transistor Amplifiers: Elementary idea about operational amplifiers.

4. *Rectifiers* : Operation of half wave and full wave amplifiers and rectifiers filters. Operation of controlled rectifiers and their application.

5. *Oscillators* : Operation of basic types of inductance and capacitance oscillators.

6. *Elements of Computer Engineering* : Analogue versus Digital computers: Block diagram of Digital computer: Block Diagram of microprocessors.

7. *Electronic Measuring Instruments* : General principle of electronic voltmeters: and cathode Ray Oscilloscopes. Principle of Measurements of Non-electrical quantities.

SECOND YEAR B.E. (Met. Engg.)

Paper III—Mathematics (Met.) :

(a) *Differential Equations* :

Ordinary differential equations of second order with variable co-efficients, variation of parameters, solution in series.

Partial differential equations of first order Lagrange's methods, standard forms, Charpit's method.

Method of separation of variables—applications to the solution of wave equation in one dimension. Laplace's equation in two dimensions. diffusion equation in one dimension.

(b) *Transform Calculus* :

Laplace transform with its simple properties. applications to the solution of ordinary and partial differential equations having constant co-efficients with special reference to the wave and diffusion equations.

(c) *Numerical Analysis* :

Finite Differences—Forward, backward and central differences. Newton's forward and backward difference interpolation formulae. Stirling's formula. Numerical Differentiation and Integration.

Solution of ordinary differential equations of first order by the methods of Picard, modified Euler, Milne and Runge-Kutta (Fourth order method).

(d) Complex Variables :

Analytic functions, Cauchy—Riemann conditions, Elementary conformal mapping.

(e) Fourier Series :

Expansion of simple functions in Fourier Series, Harmonic Analysis.

Paper 2—ENGINEERING MATERIALS (MET).

Structure of atom, Quantum numbers, electronic configuration of elements and its influence on the properties.

Atomic bonding and structure of solids. Ionic, covalent, metallic and Van der Waals bonding, Crystal Structure, space lattices, Miller indices. Common crystal structure in elements, ionic crystals and molecular crystals, Structure of alloys, Silicate structures. Imperfections in crystals. Non-crystalline solids—glasses, linear and network polymers.

Diffusion, diffusion phenomenon, mechanisms of volume diffusion in metals volume diffusion in ionic and covalent solids, other types of diffusion. Diffusion in non-crystalline solids. Mathematical description of diffusion.

Properties : Physical Properties—electrical, magnetic thermal and optical properties, Mechanical properties hardness, strength, ductility, resilience and toughness.

Organic materials : Polymerisation. Thermo-setting and thermoplastic resins, elastomers and rubbers. Thermal, mechanical and chemical behaviour of polymers. Degradation of polymers, polymers as engineering material, Ceramic materials : Ceramic phases and their comparison with non-ceramic phases. Dielectric magnetic ceramics and their applications. Glasses and refractories. Abrasives and silicones. Mechanical behaviour of ceramic materials and their applications.

Paper 3—COMPUTER METHODS (MET.)

Introduction: Introduction to computers, computer organization Input/Output, Memory, Arithmetic Unit. Control unit. Number systems: Binary, Octal hexa, decimal number systems Binary Code-word organization in a computer storage area.

Numerical Methods of Solving Problems : Introduction to numerical analysis. Flow Charting Algorithms, loops and indices. Iteration or rotation procedure.

Language: Difference between lower order (Machine language) and higher order language (Fortran).

Fortran Language : Symbols for arithmetic operations constants, integer, real and Enformat, variables. type statements Arithmetic statements.

Input/Output ; List of input/output statements. Format statements for integer, real and exponent field, specifications skip specifications, various carriage controls.

Control Statements ; Go to statement, Arithmetic IF computed to go statement.

Do Statement: Rules governing Do statements. Nested Do statement, Continue statement.

Logical Statements ; Logical contents, logical operations variables, logical expressions and logical IF statement.

Double Precision and Complex Arithmetic: Tupe statement double precision and complex variable and expressions.

Subscripted Variables: Definition single and double subscripted variables, Dimension statement.

Fortran Functions: Arithmetic statement functions, Built in library functions, Fortran Functions..

Subroutine: Subroutine name, subroutine linkage. Call statement. Equivalence common Data and Block Data statement.

Practice: Writing computer programme. preparation of Fortran deck, cards, comments. statements. Debugging Dump routines.

Paper 4—MECHANICAL BEHAVIOUR AND TESTING OF MATERIALS

Elastic and plastic deformation. Analysis of stresses and strains in three dimensions. Mohr's Circle. Yield criteria Slip and twinning. Dislocations - Their geometrical properties, stress field and strain energy. Movement and Multiplications of dislocation. Dislocation reactions. Application of dislocation theory—yielding. work harde hardening strengthening mechanisms. Hall-Petch relation. Cold and hot working. Recovery, recrystallisation and grain growth.

Superplasticity : Fracture : Types of fractures, crack nucleation and growth mechanism. Griffith Criterion. Creep curves. Fatigue, S.N. Curves, Creep and fatigue failures.

Testing of Metals :

Tensile test. Engineering and true stress strain curves. Tensile testing machines. Hardness test--Indentation and micro hardness test. Shore scleroscope Impact test Charpy and Izod. Fatigue and creep testing machines. Ductility test. Principles and classification of various non-destructive testing.

Paper 5—MECHANICAL BEHAVIOUR AND TESTING OF METALS

Thermodynamic system, the state of a system and its transformations. Isothermal and adiabatic expansion of a perfect gas. Forms of energy. First law of thermodynamics. Change in internal energy, enthalpy, heat capacities, heat of reaction, heat of formation. Hess's law. Kirchhoff's law. Carnot cycle. Second law of thermodynamics. Thermodynamic absolute temperature scale. Reversible and irreversible processes. Criteria for equilibrium, Entropy with temperature, entropy change associated with the phase change, entropy of mixing, Helmholtz and Gibbs's free energy Gibbs's Helmholtz equation. Clausius Clapeyron equation, Maxwell equations. Third law of thermodynamics.

Fugacity, activity, equilibrium constant, temperature dependence of equilibrium constant. Thermodynamics of electrochemical cells.

Partial molar properties, chemical potential, Gibbs's Duhem equation. Ideal solution, Raoult's law, Henry's law. Soret's Law activity coefficient, non-ideal solutions. Regular solution excess thermodynamics function, Determination of activity.

The derivation of Gibbs's phase rule, the use of free energy composition diagrams in establishing simple phase diagrams. Free energy-temperature diagrams for the formation of oxides, sulphides, and chlorides and their application in Metallurgy.

Order of reaction and molecularity. Kinetic theory of chemical reaction. Activation energy. Theory of absolute reaction rate. Determination of order reactions.

Paper 6—INTRODUCTION TO PHYSICAL METALLURGY

Metallurgical microscope, Abbe's theory of image formation, resolving power, empty magnification. Use of hot stage, polarised light phase contrast and interferometry in microscopy.

Solidification of pure metals and alloys, Cailled, columnar and equiaxial crystals, dendritic growth, imperfections normal inverse and gravity segregation and coring.

Phase rule, binary equilibrium systems isomorphouseutectic, peritectic, monotectic, eutectoid, peritectoid reactions. Order disor-

der transformation. Study of phase diagrams, metallography and properties of commercially important alloy systems viz. Cu-Zn, Cu-Ni, Cu-Al, Pb-Sn, Al-Cu, Al-Si etc.

Detailed study of iron carbon equilibrium diagram effects of alloying elements.

Basic principles of heat treatment, annealing normalising hardening and tempering. T.T.T. curve, factor affecting hardenability.

Paper 7—INTRODUCTION TO PROCESS METALLURGY

Ores, their preparation and beneficiation for smelting. Hydrometallurgical, electrometallurgical and Pyrometallurgical process. Unit processes of extractive metallurgy—calcination, roasting, sintering, reduction and matter smelting, converting, fire refining and distillation. Simplified flowsheets for the production of copper, aluminium, zinc, lead, nickel, gold and silver.

Fuels—Indian resources, comparative study of solid, liquid and gaseous fuels, constitution of coal. Washing of coal Metallurgical coke and carbonization. Production of water gas and producers gas Testing of fuels and fuel economy. Selection of fuels for different metallurgical furnaces.

Paper 8—PRODUCTION OF IRON AND FERRO-ALLOYS

General: Iron ores, Classification and characteristics. Survey of Indian iron ores, ore preparation and agglomeration, theory and practice of sintering and pelletising. History of iron ore smelting, development of blast furnace.

Raw Material: Blast furnace raw materials, specifications, blast furnace burdening and distribution of charge.

Design: Blast furnace and stove design, other auxilliary units and instrumentation, blast furnace refractories.

Operation: Blast furnace irregularities and remedies.

Reactions: Blast furnace reactions, C-O, Fe-C-O, Fe-H-O and Fe-H-C-O equilibria, temperature profile inside the blast furnace and gases in stack.

Slag: Blast furnace slags effect of Al_2O_3 , CaO, MgO and SiO_2 , slag control, possible effects on blast furnace operation with special reference to Indian conditions.

Modern Development: Humidified blast, oxygen enriched blast Auxiliary fuel injection and high top pressure. Factors affect-

ting coke consumption and productivity, high capacity blast furnacc. Computer control of blast furnace.

Direct Reduction: Alternative methods of iron making classification, details of some commercial processes, present status of alternative methods of iron making with special reference to Indian conditions.

Ferro alloys: Principles and practice of ferro-alloys production in blast furnace, electric furnace and by metallothermic reduction with soecial reference to the production of ferro manganese, ferro silicon, silico-manganese, ferro chrome and other alloys.

ELECTIVE :—Any one of the following :—

Paper 9(a)—ELECTRONICS & INSTRUMENTATION

Electron Tubes : Elementary ideas about electron emmission, operation and characteristics of diodes, triodes, pentodes, photo tubes and cathode Ray tubes.

Transistors and Semi-conductors : Basic ideas about semi-conductors, P-N Junction Diodes, P-N-P-Junction Transistors, Silicone Controlled Rectifiers.

Basic Amplifiers : Simple Equivalent circuits, classification of amplifiers, Analysis of R--C coupled amplifier, Elementary idea about other amplifiers, Elementary idea about Transister, Amplifiers, elementary idea about operational amplifiers.

Rectifier: Operation of basic types of inductance and capacitance oscillators.

Elements of Computer Engineering : Analogue versus Digital computers, Block diagram of Digital computer, Block Diagram of microprocessors.

Electronic Measuring Instruments : General principle of electronic voltmeters, and cathode Ray Oscilloscopes. Principle of Measurements of Non-electrical quantities.

Paper 9(b)—PRODUCTION TECHNOLOGY

Forging: Machines and accessories, hammers and drop forging, dies and tools, principles of forging tools design.

Finishing and superfinishing proecesses: Construction and operation of grinding, honing and lapping machines. Selection of grinding wheels.

Manufacture of gears: Gear cutting, shapping, hobbing, shaving grinding. Indexing for hobbing special purpose. Machine tools like automatic lathes, capstan turret, screw machines and swiss automatics. Illustration of tools arrangement for the above machines.

Jigs and Fixtures Elementary treatment as applied to drilling milling press working and inspection processes. Standard components. Holding devices for jobs and tools.

Outlines of general tool room practice: equipment prototype manufacture. manufacture and reconditioning of tools. Jigs and fixtures.

Paper 9(c)—MECHANICS OF MATERIALS

Sub:—The portion will be based on direct simple application of following topics to field and design engineers in Metallurgy Branch.

Stress and strain—Hooke's law. Tension, compression and shear, complementary shear stress. Poisson's ratio. Elastic constants and their relations for an isotropic material. Temperature stresses.. composite bars. Elastic and plastic behaviour of common materials in tension and compression characteristics stress—strain curves. Resilience and suddenly applied loads. Ultimate strength. Working stress and factor of safety.

Bending moment and Shear force diagrams for cantilevers, simply supported, overhanging and determinate compound beams subjected to static loads—concentrated, uniformly distributed and uniformly varying.

Stresses in beams—Theory of simple bending, section-modulus, Distribution of normal stress due to bending, composite beams, shear stress distribution in rectangular, circular, T-and I-Sections.

Relation between load, shear force, bending moment, slope and deflection. Slopes and deflections of cantilevers and simply supported beams by Macaulay's methods.

Combined bending and direct stresses. Eccentric loading, middle third rule. Kern of a section.

Principal planes, stresses and strains, Mohr's circle diagram. Theories of elastic failure.

Torsion-shear stress in solid and hollow circular shafts. Angle of twist. Power transmitted by a shaft under stresses. Effects of end thrust. Stress and deflection of close coiled helical springs.

Columns. Long and short columns. Slenderness ratio. Ideal strut, Euler's formulae for crippling load. Various end conditions. Equivalent length of a strut. Stresses in columns carrying axial and eccentric loads, column with initial curvature and laterally loaded columns. Empirical formulae-Parabolic, Straight line, Rankine's Secant and Indian Standard.

SECOND YEAR

(ELECTRICAL ENGINEERING - ELECTRONICS OPTION)

Paper 1 :	Mathematics III (E)	} Syllabus is same as in Second Year Electrical Engineering.
Paper 2 :	Electrical Engineering Materials	
Paper 3 :	Computer Methods (E)	
Paper 4 :	Electronics I	
Paper 5 :	Circuit Analysis I	

Paper 6—ELECTRIC POWER

1. *ENERGY SOURCES & POWER GENERATION* : Methods of Bulk energy generation, Thermal, Hydro, Diesel and Nuclear Power Sources, Elementary ideas of other sources of power generation in wind, Solar, Tidal, Geothermal & M.H.D.

2. *TRANSMISSION & DISTRIBUTION SYSTEMS*: General idea of Transmission and Distribution System, Electrical equipment of a power station; sub-station, Solution of Short, Medium and Long Transmission line. Corona discharge in power lines. Factors affecting corona. Interference of power and communication circuits. Reduction of interference. Conductors and insulators for overhead transmission lines. Underground cables.

3. *ELECTRIC DRIVES*: Specifications, Ratings of machines, Short term, continuous and special ratings, Types of motor enclosures and their respective fields of applications. Starting and running characteristics of various d.c. and a.c. motors. Starting and speed control of d.c. and a.c. motors.

4. *UTILIZATION*: (a) Heating and Welding--Different methods of electric heating, Principles of Resistance, Induction and Dielectric heating. Electric Welding processes. (b) Illumination: Electric Light Sources, Incandescent and electric discharge lamps, Simple lighting calculations.

5. *PROTECTION*: Causes and consequence of dangerous currents. Faults, Overloads and Switching over currents. Basic idea of an Over current relay as a level detector. Basic idea of Unit and non-unit system of protection. Carrier current protection of Transmission line. basic apparatus used for Power line carrier system. Principle of operation of Directional comparison and Phase Comparison Carrier Protection.

Basic ideas of static relays and their advantages and limitations.

Any one of the following.

Paper 9 : Elective I : Line Communication Engineering

1. *Microphones and Loud Speakers*: Various types Microphones, Telephone Receiver and M.C. Loudspeakers.

2. *Telephony*:

(A) Manual Telephony--Transmission Bridges, Manual Exchange Switch Board, Subscribers Telephone circuit and Line circuit; C.B. cord circuit. Operators Telephone circuit. Repeater circuits.

(B) Automatic Telephony--Method of signalling, simple 10 line system two Motion selector, 1000 and 10,000 line systems with common switching, traffic Definitions; Automatic systems.

(C) Carrier Telephony--Elementary ideas about multichannel systems:

(D) Basic Ideas of Crossbar system. Electronic Exchanges.

3. *Telegraphy*:

(A) Telegraph codes and distortion, various types of telegraph keys and relays. Simple telegraph circuits.

(B) High speed telegraph systems, Elementary ideas about Teleprinter.

(C) Elementary ideas about Voice frequency telegraphy, picture telegraphy.

4. *Transmission Lines*: Basic line Equations and their solutions.

Paper 9 : Elective I (Electronics Option)

- (b) Hydraulic & Water Power Engineering
- (c) Mechanics of structure
- (d) Thermal Power Engineering

} Syllabus is same as in Second Year Electrical Engineering.

(Civil Engineering)

Paper—1. Theory of Structures

1. Clark Maxwell's reciprocal theorem; Betti's theorem; Muller Breslau's principle; influence lines for support reactions, shear force and bending moment in fixed and continuous beams.

2. Deflection of framed structures. Analytical and graphical methods of finding deflection of perfect frames: Williot-Mohr diagrams.

3. Unsymmetrical bending of beams.

4. Slope-deflection method. Applications to continuous beams and rigid-jointed plane frames.

5. Moment distribution method. Applications to continuous beams and rigid-jointed plane frames.

6. Redundant frames. Castigliano's theorems: Principle of minimum strain energy: Applications to frames with one and two redundant members, trussed beam, two hinged arch and portal frames

7. Arches and suspension cables. Eddy's theorem : Influence lines for thrust and bending moment in three hinged arches: Analysis of two hinged arch and bow-string girders for static loadings Shape of a cable under its own weight and a given system of loading: Thermal stresses in arches and suspension cables.

8. Column analogy method for beams and portal frames: Stiffness and carry-over-factor for non-prismatic beams.

Paper—2. Structural Engineering Design I (R.C.C.)

1. Materials for cement concrete. Cement—properties of the various types of cements, I.S.S. tests, storage; Aggregates-properties of fine and coarse aggregates, natural and artificial aggregates, I.S.S. tests, grading of aggregates, fineness modulus, impurities and their effects; water—standards expected of water, effect of impurities; brief introduction to admixtures.

2. Concrete. Mixing—ordinary and controlled mixes. Design of mixes—trial and error, void ratio, fineness modulus methods: Tests for workability of fresh concrete: Effect of w/c ratio on strength: Properties of hardened concrete; strength tests on hardened concrete.

3. Necessity of reinforcement: characteristics of reinforcement: reinforcing materials: elastic theory for reinforced concrete design: assumptions made.

4. Design of beams. Singly and doubly reinforced rectangular and C-beams: C-beam floors.

5. Design of subsidiary and main beams: design of cantilevers balconies and staircases (excluding spiral staircase); reinforced brick lintels.

6. Design for shear and bond.

7. Design of slabs. Simply supported slabs, two way reinforced slabs with corners free to lift and held down Marcus method Grashoff-Rankine formulae; Continuous slabs; reinforced brick slabs.

8. Design of columns. Axially loaded short and long columns with lateral and helical reinforcement; eccentrically loaded columns. effect of small and large eccentricities, Direct and bending stresses in R.C. sections.

9. Design of footings. Independent and combined footings; design of piles and pile caps.

10. Formwork. Design of formwork for slabs, beams and columns; striking of formwork.

List of Codes and Tables to be given in examinations of the Structural Engineering Design I :-

1. I.S. 456-1978 Code of Practices for Plain and Reinforced Concrete.
2. I.S. 875-1964 ; Code of Practice for Structural Safety of Buildings; Loading Standards.

Paper—3. Hydraulics and Hydraulic Machinery (C)

- (a) Dynamical similarity and Dimensional Homogeneity, Model Experiments. Geometric. Kinematic and Dynamic similarity. Reynolds' Froude, Weber's Cauchy, (or Mach) numbers. Distorted and undistorted models. Proper choice of scale ratios. Scale effect. Principle of dimensional analysis. Buckingham Theorem. Application of Dimensional analysis to pipe friction problem resistance to motion of partially and fully submerged bodies and other simple problems. ship model experiments. Forces on immersed bodies, Elements of boundary layer theory.

- (b) *Flow through pipes :*

Equations of friction coefficient and velocity distribution for laminar and turbulent flow in pipes. Blasius and Nikurades's experiments. Stanton curve. Prandtl and Von Karman's formulae. Pipe Co-efficient, Laminar sublayer. Hydraulically smooth and rough surface. Hydraulic analysis of complex pipe networks by Hardy Cross Method.

(c) *Flow through Channels :*

Uniform, non-uniform and variable flow, Hydraulic gradient for channels. Channels of constant mean velocity. Equation of gradually varied flow in prismatic channels. Limitations of its applicability and assumptions made in its derivation. Parallel and curvilinear flow. Specific energy of flow. Critical depth in prismatic channels. Alternate depths, Rapid, Critical and Tranquil flow. Mild, steep and critical slopes, classifications of surface curves in prismatic channels and the computation Hydraulic jump or standing wave, Conjugate.

(d) *Impact of free jets:*

Impact of a jet on a flat or a curved vane, moving and stationary vane; flow over radial vanes.

(e) *Centrifugal pumps:*

Volute and whirlpool chambers. Losses of head due to variation of discharge. Manometric and Hydraulic efficiencies. Description of single and multistage pumps. Specific speed. Characteristic curves. Pumps in series and parallel. Model test.

(f) *Turbines:*

Reaction and impulse turbines. Mixed flow turbines, Pelton wheel. Francis turbine. Propeller turbine. Kaplan turbine. Determination of vane angles. Specific speed and efficiency characteristics of turbines. Governing of turbines, Pressure regulations. Surge tank Draft tubes, selection of turbines, Model tests.

Paper—4. Surveying-II

1. *Errors in Surveying:*

Classification of errors in surveying: The probability curve, its equation and properties; theory of least squares. Weight, most probable value, probable error, standard errors, Normal equation, correlatives. Adjustment of a level not by the method of least squares.

2. *Triangulation:*

Merits and demerits of traversing, triangulation, and trilaturation. Grades of triangulation: strength of figure. Field procedure of triangulation. Reconnaissance and selection of triangulation stations. Intervisibility and calculation of the

heights of towers. Equipment for base line measurement, corrections to base line, Electronic instruments (Geodimeter and Telluro-meter) for base line measurement. Adjustment of angles of quadrilateral and a triangulation not with a central station. method of equal shift. Satellite station and base extension.

3. *Field Astronomy:*

Definitions of terms used in Astronomy. Coordinate systems Time—sidereal time. apparent solar time, mean solar time, standard time, equation of time. Conversion of M.S.T. to S.T. and vice-versa, conversion of L.M.T. and vice-versa. Determination of chronometer error, Azimuth true meridian, time, latitude. Longitude. Corrections to observed altitude, Position lines and Laplace stations.

4. *Photogrammetry:*

Historical developments in photogrammetry. Types of air photographs, Flight planning. Fundamentals of radial plotting, line assumptions. Plotting of maps from Photographs, Elements of Stereoscopy, Parallax bar and Parallax equation, correction of crude heights, Mosaics. Orientation concepts.

5. *Map and Plan Reproduction:*

Determination of horizontal and vertical angles from terrestrial photographs, photo-theodolite, scale of vertical photograph. Relation between principal point. Plumb point and isocenter-height of object from relief displacement, drift and effective coverage of the photograph.

Paper—5. Soil Mechanics and Foundation Engineering-I.

1. Soil and Soil-mass constituents. Water content, specific gravity, voids ratio, porosity, degree of saturation, air voids and air content, unit weights, density index etc. Inter-relationships of the above.

2. Determination of water content, specific gravity particle size distribution (Sieve and Sedimentation analyses). Consistency limits, voids ratio and density index. Classification of soil for general engineering purposes: particle size, Textural, H.R.B. and Unified and I.S. classification systems.

3. Soil structure; single grained honeycombed. flocculent, dispersed structures of composite soils, Clay Structure; Basic building blocks, structures of illite, Montmorillonite and Payolinite and their characteristics.

4. Soil water: Adsorbed, capillary and free, Darcy's law, permeability of soil and its determination in laboratory. Field pumping out test. Factors affecting permeability. Permeability of stratified soil masses. Seepage and seepage pressure. Quicksand phenomenon. Total, Effective and pore pressures. Laplace's equation for seepage. Flownet and its construction by graphical and electrical analogy methods. Determination of seepage by flownets. Uplift pressure, piping. Principle of drainage by electro-Osmosis. Piezometric line.

5. Mohr circle of stress. Shearing strength of soil, parameter of strength. Coulomb's failure envelope, determination of parameters by Direct Shear Box. Triaxial and unconfined compression apparatuses. Typical stress-strain curves for soils, for soils. Typical failure envelopes for cohesionless soils and normally consolidated clay soils. Stress path concept.

6. Principles of soil compaction. Laboratory compaction tests: Proctor's, Modified Proctor and Jodhpur Minicompactor tests. Measurement of field compaction. Field methods of compaction and its control.

7. Soil stabilisation: Mechanical Stabilisation. Stabilisation with cement, lime, bitumen.

8. Elementary engineering properties of rocks: Igneous, sedimentary and metamorphic: graphite, basalt, sand stone, shale, limestone, gneiss, marble quartzite and slate their porosity and density. Elastic properties of rocks: stress-strain relationship: quasi-elastic, semi-elastic nonelastic. Elastic constants for rocks and their inter-relationship. elastic theory applied to design of rocks (guide lines only).

9. Strength and failure in rocks: uniaxial, compressive and tensile strength, strength in confinement. Criterion for shear and tensile failures. Typical failure envelopes: granite, sand stone and shale.

10. Testing of rocks: Laboratory testing: preparing specimen and performing of tensile, compressive indirect tensile strength and shear tests. Triaxial testing. Field testing of rock: Jack test, bolt test and field shear test.

Paper—6. Structural Engineering Design II (Steel and General).

1. Mild steel and high tensile steel: working stresses, factor of safety: live loads on various types of floors and roofs.

2. Design of beams: Simple and compound sections, main and subsidiary beams and their connections.

2. Design of plate girder: Flange area and moment of inertia methods; splicing of web and flanges; intermediate and bearing stiffeners; design of gantry girder.

4. Design of tension members.

5. Design of columns : axially and eccentrically loaded columns; built up columns, design of lacing and battening.

6. Column bases; column footings; grillage foundations. Beam-column connections.

7. Design of roof trusses; loads: economic spacing of trusses; design of purlins and joints.

8. Timber: Strength of timber in tension, compression and shear along and across the grains; design of timber trusses and joints.

9. Welding: Welded joints; design of joints in trusses, plate girders and brackets.

10. Brief introduction to aluminium structures.

List of Codes and Tables to be given in examinations of Structural Engineering Design II :-

1. I.S. : 800-1962. Code of Practice for Use of Structural Steel in General Building Construction.
2. I.S.: 875-1964. Code of practice for Structural Safety of Buildings: loading Standards.
3. I.S. : 883-1970. Code practice for Design of Structural Timber in Buildings.
4. Steel Tables.

Paper—7. Building Technology

(A) Planning and Designing Buildings :

1. Introduction : Building site—its selection and comparison—Site plan and its details: Orientation of Buildings—Meaning, factors effecting orientation, and orientation criteria: sunchart, concept of sunshades, sun breakers and louvers; Bi-climatic chart.

(2) *Building By-Laws and Principles of Planning:*

Building By-laws and regulations regarding—Means of access; Lines of Building frontages, covered area of buildings, open space requirements around building and their heights; size height and ventilation requirements;

Plinth regulations: projection of chajjas, sunshades, etc: provision for parking, garages, stairs, surface drains, water supply and sanitation provision by sizes and section of structural members.

Various principles of planning are: aspect, prospect, privacy, Grouping, roominess, circulation, flexibility Elegance, etc.—their significance with respect to site location, climatic conditions, accommodation requirements, purpose, local bye-laws, surrounding environment, etc.. Arrangement of doors, windows, cup boards, furniture, etc. in conformity with bye-laws and Building code of practice.

3. *Aesthetics and Architectural composition in Buildings:*

- (i) Physical appeal in buildings through form, shape, mass, tone and texture.
- (ii) Scope of materials and construction techniques in architectural design.
- (iii) Principles of architectural composition, i.e. Unity, mass composition, contrast, balance, character, proportion. Utility, scale and expression of purpose.
- (iv) Surface finishing and their aesthetic value.

4. *Planning of Residential and Non-Residential Buildings:*

Elements of planning, functional requirements and their relationship, and Accommodation requirements only for

- (i) Residential building flats, apartments, bungalows. Cottage and out-house.
- (ii) Non-residential buildings-College library, school building, bank, shop, office and a cinema theatre.

(B) Building Construction :

1. Foundations: Purposes, principles of design and selection of a foundation type: Bearing capacity of soils—their determination and methods of improving bearing capacity of soils: Description and study of spread footings for walls and columns. Description and study of pile, well and pier foundations: Description and study of Raft, Grillage, stepped foundations.
2. Excavations in dry and loose soils. Different methods and their suitability.
3. Acoustical treatment.

8. Transportation Engineering.

1. *Introduction*: Transportation systems, their objectives, relative merits and demerits, Technological and operating characteristics of various modes of travel. Transport coordination--objectives types and methods of achieving coordination with special reference to Indian conditions.

2. *Transport systems in general*: Development of Transportation modes; Transport agencies: compounds; components of each transport system; surveys for alignment of Roads and Railways : Highway and Airport planning.

3. *Materials and Testing*: Properties of soils, stone aggregates and bituminous materials viz. Bitumen, Tar, cut-back and emulsions. Significance, methods and application of various tests on soil, stone aggregates and bitumen.

4. *Traffic Engineering*: Scope ; Traffic flow characteristics, Traffic studies--their significance and characteristics, Traffic control devices, i.e. signs, markings, islands and signals; Types of road crossings; Roundabouts and grade separated intersections.

5. *Principles of Geometric Design of highways*: X-sectional elements, sight distances, horizontal alignment and vertical alignment.

6. *Principles of Structural design of highway pavements*: Flexible pavements by G.I. and C.B.R. method. Rigid pavements by westergaard and modified method.

7. *Roads construction*: Methods of constructing different types of Roads, viz., Earth roads, stabilized roads, W.B.M. Roads, Bituminous roads and concrete roads.

8. Drainage, maintenance and modernization of roads.

9. *Railways*:

History : Gauge problem. Rights of way, gradients. Ballast and sleepers. Rail fastenings and other component part. Different types of rails.

Functions and requirements of different types of ballast sections. Sleepers--different types and materials. Requirements of rail joints. Fish plates.

Points and crossings. Construction and operation of turn-outs. Stationyards and sidings. Modernization of tracks.

9. Elective:

Either 9(i)—Advanced Construction and Construction Management Section-'A'

1. Tunnelling : Classification. Geological factors in tunnelling. Tunnel surveys. Cut & Cover tunnelling. Relative merits. Hard rock tunnelling. Full face, heading & benching and drift methods. Miners methods. Timbering. Blasting for rock excavation. Explosives.

Soft soil tunnelling. Shield tunnelling. Different kinds of lining of tunnels. Rock bolting.

Drainage & ventilation of tunnels. during construction and after construction.

2. Docks & Harbours : Action of wind, waves and currents, Breakwater and their construction, Harbours, Docks, Quays. Construction of Wet docks, Dry docks, Locks and lock Gates, Transit, Sheds, warehouses, Jetties.

3. Equipment for Construction:

(i) Equipment for excavating and hauling—Power shovels Draglines. Scrapers or side delivery loaders; Trucks, Bolt Conveyors.

(ii) Equipment for excavating, blending and compacting Bulldozer, Grader; Grrows (or ploughs) Sheep-foot and Rubber Tyred Rollers.

(iii) Principles governing choice and size of equipment.

Section-'B'

Need for scientific management in const. Industry. Managerial functions.

Management of construction plant and equipment. Temporary construction structures such as scaffolding shoring and underpinning. Formwork and shuttering. Cofferdams: different types. Relative merits. Material and Personnel Management. Financial management.

Planning for construction using network analysis. CPM & PERT techniques. Elementary ideas about compression of networks

Elementary ideas about resource scheduling.

4. Doors & Windows: Technical terms used. Purposes. location, sizes and designation of doors and windows as per the building code.

Doors—Their fixation in a wall, description of different types and suitability.

Window—Methods of fixing in a wall, description of different types and their suitability.

Fixtures and fastenings for doors and windows—description and utility.

5. *Vertical Transportation*: Means of vertical transportation and their choice, such as stairs, lifts, ramps, Escalators and ladders. Stairs and staircases—Technical terms used; Requirements of a good staircase; classification of stairs according to shape and materials used. Constructional detail and suitability of different types of stairs.

6. *Roofs and Roof-coverings* : Purposes, classification of roofs and technical terms used. Constructional details of pitched roofs including king post and queen post trusses. Factors in selection of roof types. Types of roof coverings and their selection line diagrams of steel trusses and their suitability for different spans and conditions.

7. *Ground and upper floors* : Floor components and their functions; selection of floorings and floor types; constructional details of ground and upper floors, their merits and demerits.

8. *Arches and Lintels* : Purposes and technical terms in Arch work. Types of arches and their constructional details. Types and construction of Lintels. Comparison of arches and Lintels.

9. *Damp-proofing in buildings* : Sources of dampness, effects of dampness; Techniques and methods of damp prevention. Materials of damp-proofing.

10. *Fire-protection in buildings* : Considerations in fire-protection: General Fire-safety measures, Fire-resistant construction.

11. *Painting white, colour wash and distempers* : Characteristics and application of different types of paints and distempers

9. (ii)—Advanced Structural Analysis (Elective) :

1. Review of the fundamental principles and theorems of structural mechanics: Generalized reciprocal theorem: Generalized coordinate system.

2. Flexibility and stiffness matrices and their relationship: Axial, transverse and flexural flexibility and stiffness of a structural member: Development of flexibility and stiffness matrices for structures with single and multiple degree of freedom.

3. Force method. Degree of static indeterminacy: Application of force method to continuous beams, pin-jointed plane frames and rigid-jointed plane frames.

4. Displacement method. Degree of kinematic indeterminacy: Application of displacement method to continuous beams, pin-jointed plane frames and rigid-jointed plane frames.

5. Kani's method. Applications to continuous beams and rigid-jointed rectangular plane frames.

6. Newmark's method for the solution of beams, beams with varying moment of inertia, simple cases of indeterminate beams, influence lines.

7. Approximate methods for analysing multistorey building frames for lateral loading—portal method, cantilever method and factor method.

9. (iii)—Theory of Elasticity, Plasticity and Experimental Stress Analysis (Elective) :

1. Analysis of Stress. Concept of stress: Notation and sign convention: equations of equilibrium: Orthogonal transformation of stresses: Principal planes and principal stresses in three dimensions: Shear stresses in three dimensions; Mohr's representation: Stress invariants: Tensor notation: Stress tensor: Boundary conditions in terms of given surface forces.

2. Analysis of Strain. Strain and displacement components: Compatibility conditions, Orthogonal transformation of strains: Principal strains in three dimensions: Shear strains in three dimensions: Mohr's representation; Strain invariants: Strain tensor.

3. Stress-Strain relations and the general equations of elasticity. Idealization of engineering materials: Generalized Hooke's law: Generalized Hooke's law in terms of engineering elastic constants: plane stress and plane strain problems: Saint Venant's principle.

4. Airy's stress function in cartesian coordinates: Biharmonic equation in cartesian coordinates: Bending of a cantilever of narrow rectangular cross-section subjected to a concentrated load at the free end or uniformly distributed load.

5. Stress and strain components in polar coordinates: Biharmonic equation in polar coordinates: Thick cylinders under uniform pressure—internal or external: Small circular holes in strained plates: Stress concentration.

6. Spherical and deviator stress and strain tensors and their invariants; Octahedral and effective stress and strain tensors and their invariants.

7. Failure theories; Yield conditions; Plastic stress-strain relations; Plasticity conditions.

8. Model Analysis: Principal of similitude. Methods of strain measurement—mechanical, electrical and optical gauges, oscilscopy; Methods of deformation measurements, Begg's deformeter; Electrical circuits for single gauges and rosettes--Use of oscilloscope for balancing and measurement of transient strains. Electrical analogy for seepage in soils, for stress distribution in solids and other potential flow problems. Measurement of ground vibrations—Sismographs; Dynamics recorders; Pressure cells for study of stresses; Photo elasticity--Principles--Two dimensional photo elasticity for model studies of structures; Brittle coatings; Moiré's fringe method.

Third Year B.E. (Electrical Engineering)

1. Electronics-II :

1. *Feed Back Amplifier* : Basic concepts about feed back theory, Basic vacuum tube and transistor feed back amplifier circuits.

2. *Tuned Amplifiers* : Electron tube and transistor single tuned voltage amplifiers, Basic ideas about double tuned voltage amplifiers and tuned power amplifiers.

3. *Controlled Rectifiers* : Controlled rectifiers using thyristors and silicon controlled rectifiers, a voltage stabilizer.

4. *Oscillators* : Analysis of basic vacuum tube and transistor inductance-capacitance and resistance-capacitance oscillators. Crystal oscillators.

5. *Modulation* : Amplitude, Frequency and Phase modulation, Basic ideas about square law and linear amplitude modulation circuits using vacuum tubes. Reactance Tube Frequency Modulation circuit.

6. *Demodulation* : Amplitude modulated detectors, Basic idea about superhetro dync amplitude modulated radio receivers.

7. *Special Type of Amplifiers* : D.C. Amplifiers—problem of drift in D.C. amplifiers. d.c. amplifiers, difference amplifiers, operational amplifiers, elementary idea about analogue computation. Application of I.C. operational amplifier.

Paper 2—Circuit Analysis-II :

1. *Coupled Circuits*: Conductively coupled circuits. Mutual Impedance. Magnetic coupling. Mutual Inductance, co-efficient of Magnetic Coupling. circuit directions and sign of mutual inductance. Mutual inductance between portions of the same circuit. mutual inductance between parallel branches, Transferred impedance.

2. *Impedance and Admittance Functions*: The concept of complex frequency. Transform impedance and admittance, series and parallel combinations.

3. *Network Functions*: Terminals and terminal pairs, Driving point impedances transfer functions, Poles and zeros, Restrictions on pole and zero locations in S-plane. Time domain behaviour from for general two-terminal pair net works.

4. *One-Terminal Pair Reactance Net Works*: Reactive net works, Separation property for reactive net works. The four reactance functions forms, specification for reactance function. Foster form of reactance net works. Causer form of reactance net-works, Choice of net-work realisations, use of normalised frequency.

5. *Two-Port General Networks*: Two Port-parameters (impedance Parameters, Admittance parameters, Hybrid Parameters, ABCD parameters) and their inter-relations. Equivalence of Two Ports. Transformer equivalents, Inter-connection of Two-Ports Net-work.

6. *Two-Port-Reactive-Net-work (Filters)*: The ladder networks: image impedance. image transfer function. Application to L.C. networks. Attenuation and phase shift in symmetrical T and K networks. constant K filters. The m-derived filter. Image impedance of M-derived half (or L) Sections. Composite filters. The Problem of termination, Lattice Filters. Bartlett's bisection theorem.

Paper 3 : Electrical Machines-II :

1. General Equation of induced Emf-Effect of Distribution. Chording and Skewing on Induced Emf.

Armature and Field MMFs—Effect of power Factor and Magnitude of current on Armature Mmf—MMF Harmonics caused by winding, distribution and saturation—Rotating Fields.

2. Induction Motors: Construction—Basic principles—Flux and Mmf waves—Induction Motor as a Transformer—Equivalent Circuits—Circle Diagram—Calculation of performance—Torque Slip Curves. Effect of Rotor Resistance—Cogging—Crawling—Starting-Speed Control—Losses and Efficiency—Testing—Induction Regulator.

Single phase induction Motor--Revolving Field Theory and Crossed Field Theory. Starting Methods.

3. Synchronous Machines: Construction—Basic principles-Flux and Emf waves—Theory of cylindrical Rotor and Salient pole Machines—Two Reactance Theory—OCSC and Zero Power Factor characteristics-potier. Triangle—ASA Method of Finding Regu-Regulation—V-curves, O-curves and power Angle Characteristics—Parallel Operation-Synchronising-Hunting and its prevention. Starting of synchronous motors.

Paper 4 : Transmission & Distribution of Electrical Power.

1. *Introduction to Transmission & Distribution systems* : Overhead and underground systems, D.C. and A.C. systems. Comparison of different systems of transmission and distribution, radial and interconnected systems.

2. *Line Parameters* : Resistance, skin, proximity effects, Inductance any number of conductors single and 3-phase lines, capacitance—single and 3-phase lines, effect of earth. Electrostatic and electromagnetic interference of transmission lines with communication circuits, reduction of interference.

3. *Performance of Short, Medium and Long Transmission Lines*: T Nominal π and rigorous solutions. generalised circuit constants. Circle diagram. Conductors and supply for overhead transmission lines. Bundle conductors.

4. *Insulation of Overhead Lines* : Materials for insulators, types of insulators, Potential distribution over a string of suspension insulators. Methods of equalising potential. Testing of insulators.

5. *Underground Cables* : Insulating materials, Types of cables construction, Voltage gradient, methods of grading of insulation, Thermal characteristics, Dielectric losses, heating of cables, sheath losses, current carrying capacity, cable capacitances, tests on cables. Cables for EHV.

6. *Switching Surges* : Travelling waves, surge impedance, Open circuited line, short circuited line, Line closed through a resistance.

7. *Grounding* : Ground resistance, expression for ground resistance, Soil resistivity—measurement, factors affecting soil resistivity. Hazards associated with current flow to ground. Grounding for safety. The general ground electrode and the single driven rod. A two electrode ground system.

8. *Extra Long distance Transmission*: Technoeconomic considerations of extra long distance transmission. Series and Shunt compensation of long transmission lines. Fields of application of HVDC transmission. Surge impedance loading (SIL).

Paper 5—Electromagnetic Field :

1. *Electrostatics*: Fundamental Relations of the Electrostatics. Fundamental Relations of the Electrostatic Field. Gauss's Law. The Potential Function. Field Due to a continuous Distribution of charge. Equipotential surfaces. Divergence Theorem. Poissons Equation and Laplace Equation. Capacitance. Electrostatic Energy, conditions at a Boundary Between Dielectrics.

2. *The Steady Magnetic Field*: Theories of Magnetic Field. Magnetic Induction and Faradays Baw, Magnetic Flux Density, Magnetic Field Strength and Magnetomotive Force. Ampere's Work Law, Permeability. Energy stored in a Magnetic Field. Amperes Law for current element, Ampere's Force Law, Magnetic Vector Potential Analogies between Electric and Magnetic field.

3. *Maxwells Equation*: Equation of continuity for Time. Varying Fields. Inconsistency of Amperes Law Maxwells Equations. conditions at a Boundary Surface.

4. *Electromagnetic Waves*: Solution for Free Space conditions. Uniform Plane Wave Propagation. Uniform Plane Waves, The Wave Equation for a conducting Medium. Sinusoidal Time Variations, Conductors and Dielectrics.

Paper 6 : Instrumentation:

1. *Theory of errors* : Methods of reducing systematic errors in measurements, Statistical analysis of random errors. Normal error curve. Estimation of errors in computed results.

2. *Transducers* : Classification of transducers. voltage and current—Generating Analog transducers. variable parameter analog transducers. Frequency generating and Digital transducers. Transducers selection factors.

3. *Display Devices & Systems* : Classification of display devices and systems. Detailed Study of Cathode Ray Tubes. Light emitting diodes. Liquid Crystal displays. Introductory idea of other display devices. Gas Discharge plasma displays. Electroluminescent displays. Incandescent displays. Electrophoretic image displays and liquid Vapour display.

4. *Recorders* : Strip chart recorders. Oscillographic recorders. Magnetic recorders. Digital recorders.

5. *Electronic Instruments* : Electronic Voltmeters, tube and transistor version, electrometer types, electronic galvanometers. Different stages and special features of A.F., R.F. and V.H.F. signal generators. Tube and transistor testers, Q-meter, Harmonic and distortion analyser. Digital Voltmeter and digital frequency meter.

Paper 7 : Control systems Engineering:

- (a) Concepts and examples of automatic control systems.
- (b) System modelling: representation of physical systems by differential equations, transfer function, block diagrams and signal flow graphs.
- (c) Error sensing devices and servometers: Synchros, A.C. and D.C. Tacho generators, field controlled and armature controlled d.c. servomotors and a.c. servomotors.
- (d) State variable analysis : Introduction, concepts of state, state variables and state model. Derivatives of state models from Transfer function and vice-versa.
- (e) Time response analysis: transient response analysis, design specifications in time domains, steady state errors and error constants, Routh-Hurwitz stability.
- (f) Frequency domain methods: design specification in frequency domain and their co-relations with time domain, polar plots, Bode plots, Nyquist stability criterion, root locus method of analysis.
- (g) Elementary ideas of compensation: Lead, lag, lead-lag network.

Paper 8 : Digital Electronics:

1. *Linear and Non-Linear Wave Shaping Circuits* : Wave shaping by integrating and differentiating circuits using passive elements. Wave shaping by clipping and clamping circuits.

2. *Waveform Generators*:

- (a) Sweep Generators : Free running time base generator, triggered voltage and current time base generators. linearity improvement methods of sweep waveforms. Sweep circuit for magnetically deflected C.R. tube.
- (b) Multivibrators : Astable, monostable, Bistable multivibrators, Schmitt trigger, triggering of flip-flops.

3. *Number System* : Positional notation. Binary number system, octal number system, radix conversion. Inter conversion of Binary, Decimal and octal numbers, Binary arithmetic.

4. *Logic Circuits* : Graphical and mathematical logic, logic gates, Theorems of Boolean Algebra. Simplification of Boolean expressions. Exclusive OR, Inhibitor, Half adder, full adder circuits, circuit realisation of logic functions and diode switching matrices.

5. *Electronic Counters & Registers* : Binary counter, decimal counter, Decade counter tubes and digital display devices. Shift registers, their serial and parallel operations.

6. *Data Converters* : Analog Digital systems. sampling and holding, Analog to Digital conversion methods, Digital to Analog conversion.

7. *Integrated Circuits* : Introduction, classification of ICs, ICs packaging.

Paper 9 : Elective—Any one of the following :

(a) *High Voltage Engineering* :

1. *Dielectrics and Insulants* : Elementary ideas of break down in gases, solids, liquids and vacuum, corona discharge, effect of corona in power systems.

2. *High Voltage Generation* : Power frequency high voltage generation—H.V. transformers. cascaded transformers. H.V.D.C. generation—rectifiers. multiplier circuits. Van-De-Graph generator. Generation of impulse voltage—Single stage and multi stage impulse generator. Generation of high frequency surges. Capacitors and resistors for high voltages.

3. *High Voltage Testing* : High voltage testing techniques. Testing of transformer oil, Low voltage machines. power cables, power transformer, power capacitor, current transformer and voltage transformer.

4. *High Voltage Measurement* : Power frequency measurement—transformer ratio, Potential transformers. Potential dividers, measurement of charging current. ionic wind voltmeter. Ryall crest voltmeter, Sphere gap measurements. uniform field gaps. rod gap, electrostatic voltmeter. Measurement of d.c. high voltage. Measurement of impulse voltage, Delay cable, Klydono-graph.

5. *Over voltages* : Accumulation of electricity in clouds. Characteristics of thunder clouds. Mechanism of lightning stroke. characteristics of lightning strokes. Lightning transients in over head systems—Direct and indirect strokes. Isokeraunic level. Switching Surges.

6. *Protection of System against surges* : Ground wires, protective angle, tower footing resistance. Protector tube, surge diverter. Insulation coordination, Basic insulation levels. Neutral earthing.

MECHANICAL

Paper 1—Net work analysis and Work study :

(i) *Net Work Analysis*:

Introduction :

Gant Chart for scheduling a project. Limitations break-up structure of work. Elements of a network, errors and dummies in network logic, a subtle-distriction. event described or activity, described network, measures event described or activity, described network, measures of activity.

Part Net Work & Times Estimates : Critical path. Critical path in a PERT-calculated network Number, sequence in a network pfullkesson's rule. Effect of introducing a dummy link in a network. A matrix method for computing E & L varivalves of a network subscritic an path.

Analysis of a network : Interrelation between event times and activity times. Float of an activity.

Project Coat by C.P.M. : Crashing a network for optimizing project cost control/PERT (Cent.). Resource allocation and load smoothing. Case study.

(ii) *Work Study*:

A direct means of raising productivity. The techniques of work study and their relationship, basic procedures.

The Human factor in the application of work study: Introduction to method study and the selection of jobs. Procedure e.g. Record, examine, develop, define install and maintain.

The Flow and handling of materials : Materials flow diagram. Use of Flow diagram with flow process chart. The man type flow process chart. The multiple activity chart. The travel chart.

Methods and movements at the work place : The principles of motion economy; classification of movements, microtion study, the asimo echart. Use of films in Methods analysis. other recording techniques.

Work Measurement : Definition, purpose, use, techniques and basic procedure of work measurement. Time study equipment, the stopwatch, study board, pencil, from etc. Selecting the job to be studied and making a time study. Rating of qualified workers and average workers. Standard rating and standard performance. Comparing the observed rate of working with the standard. Determination of Standard time. Use of time standards. Other techniques of work measurement, activity sampling, predetermined motion time systems.

Paper 2 - DYNAMICS OF MACHINERY-II

Mechanisms with lower pairs :

Pantograph, exact straight line motion, approximate straight line motion for engine indicator. Motor car steering gears. Davis and Ackermann types. Hooke's joint.

Kinetics :

Piston effort, crank effort and turning moment diagrams. Fluctuation of energy and speed. Flywheels. Inertia force analysis.

Gears :

Definitions, condition for correct gearing, velocity of sliding between two teeth and mesh : Tooth profiles involute and cycloidal types. Interference back lash and undercutting Methods of reducing or eliminating them. Helical, Bavel and spiral and hypoid gears. Efficiency of spiral gears and worm wheel.

Cams :

Types of cam—Displacement, velocity and acceleration curves for different cam follower systems Consideration of pressure angle and wear.

Gyroscopic and precessional motions :

Gyroscopic couple of a plane disc—Application to motion of ships, planes, and automobiles.

Elementary Treatment of Governors :

Watt, Porter, Prode and spring types. Effect of friction and controlling force sensitivity, stability, isochronism and hunting Effort and power of governors. Inertia governors.

Balancing :

Balancing of rotating masses in one plane and in different planes. Balancing of reciprocating masses. Primary and second-

dary balancing. Partial balancing and its effects. Direct and reverse crank methods, Balancing of in-line engines.

V type engines, radial engines and locomotives.

References :

Prof. J.M. Shah, Dr. Jagdish Lal "Theory of Machines",
Metropolitill Book Co,

P.L. Ballaney—"Theory of Machines"
Khanna Publishers.

Abdulla Sheriff—"Theory of Machines"
Dhanpatrai & Sons.

Paper 3—MECHANICAL ENGINEERING DESIGN-I

Material & Processes :

Considerations governing the choice of materials and manufacturing processes for design. Material standardisation. Influence of rate of production. Fits, tolerances, limits and surface roughness. Design of castings.

Design of Machine Elements :

Design of machine members subjected to variable load. Stress concentration and its influence on design. Endurance limit and fatigue strength, Goodman line. Soderberg line. Endurance limit modifying factors.

Design of Machine members like shaft, axially loaded members and springs under variable loading.

Design of C clamps and brackets.

Design of crank shafts, cam shafts, line shafts and connecting rods.

Design of belts, pulleys and flywheels.

Design of gear teeth, Lewis and Buckingham equations. Wear considerations. Design of fixed ratio gear boxes.

Threaded fasteners : Effect of initial tensions and applied loads. Static and dynamic loads. Fatigue and creep considerations. Effect of temperature.

Springs :

Laminated springs, helical springs--torsion compressions, tension and cone springs. Negator springs, special springs. Graphical and numerical design methods.

Bearings :

Design of sliding and journal bearing. Considerations of minimum film thickness. Design of oil ways.

Selection of oil seals and flat foils.

Selection of antifriction bearings for different environments, loads and load cycles.

References :

- Pandya & Shah—'Machine Design'.
- Bahl & Goyal—'Mechanical Machine Design'.

Paper 4—I.C. ENGINEERING

Combustion in S.I. Engines :

The Process of combustion. Knocking. Effects of engine variables on Otto knock. Knock rating of fuels. Octane number, Abnormal Combustion—its cause and effects and reduction. Effect of additives.

Combustion in C.I. Engines :

Stage of combustion—Diesel knock, Effect of operating variables. Knock rating of C.I. Engine fuels. Centane number. Effect of additives.

Combustion Chambers :

Requirements of combustion chambers. Types of combustion chambers for S.I. and C.I. Engines.

Spark Ignition Systems :

Characteristics of S.I. Engines. Ignition System. Spark ignition. Battery., magneto and Electronic Ignition. Antiemission devices.

Addition Engine Cooling :

Effect of operating conditions. Various methods of cooling. Power absorbed in cooling. Temperature gradient in engine parts.

Supercharging :

Supercharging. Suitability for S.I. and C.I. Engines. Methods of supercharging. Types of superchargers.

Special Engines :

Introduction to special engines like opposed piston, opposed cylinder, free piston, multifuel and rotary engines.

Performances :

- Testing of engines—their performance characteristics.

Combustion and Fuel Injection :

Fuel system for S.I. and C.I. Engines—Fuel air ratio requirements for study running and transient requirements. Fuel injection in S.I. Engines. Modern carburetors.

Fuel Injection in C.I. Engines :

Fuel pumps. Injectors.

Valve gears and Scavenging :

Type of valve gears.

Scavenging Process:?

Volumetric, charging and scavenging efficiency. Scavenging methods and systems for 4 stroke and 2 stroke engines.

Lubrication :

Lubrication of different engine parts. Engine Lubrication systems.

Open Cycle Gas Turbine, Plant : Thermodynamics cycle of operation. Influence of various parameters like pressure ratio, component efficiency, intercooling, reheating and regeneration and its performance ;

Paper 5—PRODUCTION TECHNOLOGY-I**1. Mechanics of Metal Cutting :**

Elements of cutting process, geometry of single point cutting tool, tool angles, chip formations, types of chips, chip breakers., Effects of various factors on metal cutting characteristics. Typical cutting speeds and feeds for different tool and job materials. Orthogonal and oblique cutting. Theories of mechanics of metal cutting. Cutting force measurement various types of tool dynamometers. Thermal aspects of metal machining. Measurement of chip tool interface temperature. Friction in metal cutting.

2. Machine Ability :

Evaluation of machinability. Tool life. Types of tool failure causes of tool wear, failure and their remedies. Reconditioning of tools. Expressions of relationship between cutting force, tool life, surface finish and power required. Economics of metal machining. Cutting tool materials. Cutting fluids and methods of their applications.

3. Precision Measurement :

Standards of linear measurements. Linear and angular measurements. Screw thread and gear measurement. Measurement of straightness, flatness and surface finish.

4. Precision Measuring Instruments :

Comparators - types, working principles, applications and limitations of various comparators. Optical flat. Autocollimator. Indicators, slip gages, berd protector, Limit gages, production gages, Automatic ganging.

5. General Purpose Machine Tools :

Classifications, basic constructional features and schematic treatment of construction, principle of working general applications and limitations of general purpose machine tools like lathe, drilling, boring, breaching, shaping, planing machines. Machine tool alignment tests.

6. Milling Machines :

Abrasives, manufacturing and selection of grinding wheels. Theory of grinding, characteratic terms used in grinding. Classifications, constructional features, principle of working, applications and limitations of different grinding machines. Hening, Lapping. Superfinishing, butting and polishing processes.

8. Industrial Safety :

Human factors in machine equipment safety, reducing industrial noise, granding of machines. Precautions to be taken by operators for safe working on different machine tools, power presses. Factories act.

Book references :

1. Production Technology by R.K. Jain
2. Engineering Metrology by R.K. Jain
3. Elements of workshop Technology by S.K. Hazar chau-dhary.

Paper 6—TECHNICAL THERMODYNAMICS-II

1. Combustion :

Non-steady, and complete combustion, limits of combustibility, adiabatic and equilibrium flame temperatures, kinetics of combustion quenching distance and flame stabilization. Flame propagation Velocity and burning of fuel Process of burning of pulverized and atomized fuels burning in fuel beds.

2. Heat Transfer :

Modes of heat transfer—one dimensional steady state conduction—Linear heat flow through plane well Radial heat flow through cylinders and spheres. Composite walls cylinders and spheres effect of variable conductivity.

Nature of heat convection free and forced. Boundary layer concepts. Application of dimensional analysis to free and forced convection—Reynolds, Prandtl, Grashof, Nusselt and Stanton numbers. Empirical equations of convective heat transfer.

Combined conduction and convection—heat transfer between two fluids, through plane and cylindrical walls—types of heat exchangers. EMT. Heat exchanger effectiveness.

Thermal radiation—monochromatic emissive power Absorptivity, reflectivity and transmissivity concepts of black body and greybody. Kirchhoff's Law, Wien's displacement Law and Stefan Beltsmans Law. Heat Transfer by radiation between black and grey surfaces.

Dalton's Law : Mixture of ideal gases. Irreversible mixing of ideal gases. Mixtures of gases and vapours.

3. Psychrometrics :

Basic thermodynamic data, basic variables. Psychrometric tables and charts, psychrometric process, mixing of air and steam—under different conditions. Sensible heating and cooling, humidification, Dehumidification conditions for human comfort under different situation. Effective temperature. Comfort chart, Concept of application to air conditioning.

4. Mixture of Water & Steam and of Water & Air :

Application to steam condensers. Leakage of air in condenser. Capacity of air extraction and combined extraction pumps. Air cooling sections. Vacuum efficiency, condenser efficiency and coefficient of performance.

Evaporative cooling of air and water in cooling towers, spray, Ponds. Cooling water requirement.

Direct measuring instruments for physical parameters like pressure, vacuum, temperature, viscosity, conductivity and gas analysis.

Paper 7—PRODUCTION MANAGEMENT

Industrial Psychology :

Group, dynamics. Attitudes and ideologies of organised labour.

Production & Productivity :

Utilization of resources. National productivity. Production Design: Preliminaries. Selection of product, Aesthetic, functional & strength criteria. Process selection.

Manufacturing drawing, part lists and costing import substitution. 'Alternate material specifications. Product value improvement. Concept of product reliability.

Process Planning :

Initial data Operation sequence. Selection of machine, capabilities. Processes simplification. Process sheets. Standard and allowed time. Bill of materials Preparation and estimation. Man Machine time cost estimation. Choice of machines. Payback method, discounting method.

Works Progress :

Work scheduling and control. Product mix-problem use of linear programming methods. Gantt charts: line balancing. Use of C.P.M., PERT and other net work techniques. Works order. Job card, Requisition slips. Production reporting.

Production Planning :

Objectives and importance. Its relationship with sales forecasting, production programme etc. Material flow up. Production something in scheduling. Replanning and corrective measures. Production cost control.

Inventories and Stock Control :

Inventory models, Inventory control systems. Forecasting methods. Economic order quantity. Materials management, receiving, stocking and issue procedure.

Plant location layout :

Selection of site. Layout contributing factors. Facilities available from government and autonomous agencies. Material handling systems and equipment layout according to the manufacturing system. Procedure and techniques of layout.

Plant Economy :

Maintenance, Obsolescence, depreciation, replacement. Management of preventive maintenance systems. Repair maintenance. Plant services management. Facilities. Safety legislation. Industrial accidents and compensation.

Quality Control :

Operational & economic definition of quality. Modern control planning and control concept. Organizing of quality control, Stability of production process, Design of Inspection procedure, control charts for attributes. Acceptance sampling. Sampling plan, average outgoing quality. Organization of Quality.

Books for References :

1. Production Management Analysis, L.J. Garrette & Milton Silver. Harcourt Brace Jovanovich, Inc. New York.
2. Modern Production Management--by R.S. Buffa Wiley Eastern.
3. Works organization and management by Basu, Sahu Dutta-oxford.

Paper 8—INDUSTRIAL ENGINEERING

1. Management Theory & Functions :

Evolution of management, scientific management, contribution of different leaders to scientific management—contribution of Taylor, Fayol, Mayo Reactions and Criticisms, Levels of management, Administration and management, Functions of management. Decision making. Business leader, Qualities, or Requirements of a Business Leader. Computers and Management.

2. Business Forms and Organisation :

Forms of Business: (i) Single proprietorship (ii) Partnership (iii) Joint stock company, Private Ltd., companies and public limited companies, Forming joint Stock companies (A) Registration (B) Issue of Prospectus (C) Commencement Certificate (iv) Co-operative society choice of Business forms (v) State undertaking. Organisation defined. Kinds of organisation (i) Line organisation (ii) Functional organisation (iii) Line Staff organisation (iv) Line Staff Committee organisation, How to build good organisation (v) Span of control.

3. Finance & Financial Statements :

Introduction Needs of Finance, Kinds of Capital. Sources of fixed capital shares : (i) Ordinary shares (ii) Preference shares. Borrowcapital. Surplus profits: Depreciation Allowance. Specialised Financial Institutions. Sources of working capital, Management of working capital. Financial Statement : (i) Profit & Loss Statement (ii) Balance Sheet (B.S.) compared (iii) Financial (iv) Financial rate, rates commentaries current ratio, Liquidity ratio. Profits investment ratio, equity ratio, inventory ratio. Management and Financial ratio. Money conversion cycle in the Business.

4. Interest and Depreciations:

Interest-Meaning. Compound interest Annuities—Capital recovery Annuity Present worth Annuity Sinking funds Annuity,

compound Amount Annuity. Nominal and effective rates of interest. Depreciation Meaning and causes. Need of Depreciation calculation, Methods of Depreciation—Straight line Methods. Sinking funds method. Decliniary Balance Method, Sum of years digits Method (SYD Method).

5. Costs and Cost Control :

Costs & Cost Accountancy : Meaning of cost and cost Accountancy (C.A.) Financial Accountancy (F.A.) comparison between C.A. and F.A. Elements of costs—Direct cost and indirect cost. Variable costs and fixed costs Calculation of Product cost. Cost Control Techniques of cost Calculation of Product cost. Cost Control—Techniques of cost control. Budgets. Meaning, Kinds. Advantages. Budgetary control Break even Analysis.

6. Personnel Management :

Origin and evolution. Meaning and content. Different definitions of personnel manager. Functions of personnel Manager. Recruitment. selection. placement, training. promotions transfer, demotions complaint and grivences, methods of settlement Absentism Labour turnover over Employees morals, moral and Satisfaction. Welfare Provisions, Retirement pensions, Gratuity Discharge and dismissals. Merit rating.

Profit sharing, fringe benefits etc. for higher productivity.

7. Labour Relations and Legislations :

Meaning and Scope, Trade Union. Trade Union in India. Employees Union. Methods of setting disputs (i) Collective Bargaining (ii) Concillation (iii) Mediation (iv) Arbitration Industrial disputes in India. Machinery for settling disputes. Trade Dispute Act. The factory Act of 1944. Payment of wages Act. Workmans Compansation Act. Employees State Insurance Act. Provident Fund Act.

8. Purchase of Marketing :

Purchasing important and objective. Functions and Duties of Purchase Departments. Purchasing Procedure. Kinds of Purchasing. Organisational set up. Relationship with other departments. Evaluation of Efficiency of purchase department. Marketing meaning. Importance and functions of marketing organisations. Marketing of consumer and producer goods. Consumer behaviour, Sales Promotions. Methods. Relationship of marketing with other departments.

Reference Books :

1. Essentials of Industrial Management by R. Lal. Bharti Bhavan, Patna.

2. Industrial Engineering. By Delela M. Al. Standard, Publishers, Delhi.
3. Works Organisation and management by S.K. Basu., K.C. Sahu, N.K. Datta, Oxford & I.B.H. Pub. Co. New Delhi.

Paper 9—ELECTIVE-II (MECHANICAL)

Any one of the following

(A) EXPERIMENTAL STRESS ANALYSIS :

1. Elementary elasticity :

Two and three-dimensional stress systems, Strain-Stress relations and basic equations.

2. Strain-measurement methods :

Basic characteristics of a strain Gage, Types of Strain Gage, Moire' method of strain analysis and Grid Method of strain analysis.

3. Electrical :

Resistance strain Gages' Factors producing strain sensitivity in metallic alloys, Gage sensitivity and gage factor, Gage construction and factors influencing gage selection. Parameters influencing the behaviour of bended-wire and foil strain gages. to sette analysis, strain gage circuits and related instruments. Dynamic strain measurements.

4. Photo elasticity methods :

Polarized light. polarizers, wave plates, Diffused light and Lens Polariscopes. Theory of Photoelasticity : Stress topic law in two dimensions at normal incidence, effects of a stressed model in a Plane and circular polariscopes.

5. Analysis techniques :

Photoelastic model materials. calibration methods, fringe, patters. compensation techniques, separation techniques and scaling model to proto type stresses. Three dimensional photoelasticity. Bire fringent coatings and scattered light in Photoelasticity.

6. Brittle-coating Methods :

Theory of brittle-coating method, coating stresses and failure theories. composition and behaviour of stress coat. Threshold strain, crock patters. Applications of brittle-coating methods to supplement strain gages and photoelastic methods.

References :

1. Dally. J.W. and Riley, W.F., "Experimental Stress Analysis" Mc Graw-Hill Book Company.
2. Dave. R.C. and Adoms, P.H. "Experimental Stress Analysis and Motion Measurement". Prentice Hall of India (Pvt. Ltd);
3. Halister. G.S. "Experimental stress Analysis" Cambridge.
4. Hendry, A.W. "Photoelastic Analysis", Pergaman Press.

Paper 9—(B) PRODUCTION MACHINES (ELECTIVE)

1. Copying Lathe, Control Systems, Components and templates for lathe work.
2. Precision boring Machines : Types measuring equipment, special features.
3. Machines for Production of level and Worms gears. Operating and constructional features, special applications.
4. Introduction to hydraulics and pneumatic system as applied to drive and control of machine tools.
5. Numerical Control of machine tools, Numerical control systems. code, basic procedure for preparing programme and tape. Programme controllers, Recent trends in machine controls, computer control.
6. Transfer machines : Product design for transfer machine, selection of transfer machine, classification. (dial indexing, indexing rotary table pallet type, plain type transfer machines), transfer of methods.
7. Operational planning and Turret tool layout, design of the cam for Automatic machines procedure.

Reference :

1. Pandey. Singh & Singh : A Text Book of Production Engineering.
2. Theory of machine tools by Brown.
3. Basu, Mukherjee & Mishra—Fundamentals of Tool-Engineering Design.
4. Tool Design ASHE.

Paper 9—(C) MATERIAL HANDLING & PLANT LAYOUT

Types of materials handled in an engineering plant Basic principles of materials. handling. Engineering and economics factors.

Classifications of materials, handling equipment according to operating principle, construction and nature of service.

Gravity equipment : Chutes, belt and rolling conveyers. Gravity roller spirals.

Fixed systems of power driven conveyers : Belt, Chain slot, apron, wire bush, pellet, roller flight, cross bar and chain trolley type of conveyers. Arm, Vertical slet, vertical belt and suspended tray type of elevators. Reciprocating elevators. Industrial elevators screw conveyors. Ribbon conveyors. Bucket elevators.

Skip hoists, drag scrapers, tramways and cableways.

Pneumatics and hydraulic conveyers.

Granes : Jib, electric overhead travelling (E.O.T.) rently cantilever cranes.

Trach Systems : Overhead track or monorail system. Industrial railways., Locomotive cranes.

Fortable conveyers : Hand trucks, hand lift trucks and wheel jack. Self propelled equipment like high and low lift, trucks, Fork-lift trucks.

Container system of transport : Unit loads, standardization of unit load handling.

Coordination of handling with production, continuous, repetitive and intermittent type. Balancing of assembly lines. Applications of time and motion study.

Organisation and selection of material handling system. Operation, maintenance and safety precautions. Selection of Plant Layout from material handling criteria.

(The subject will be treated discriptive only).

METALLURGY

Paper I—METALLURGICAL & INSTRUMENTAL ANALYSIS

Sampling, Importance, scope and methods of sampling solid, liquid and gaseus materials with special reference to sampling ores, fuels, gases, metals and alloys.

Chemical Analysis : Basic principles, theory of indicators. Quantitative analysis of common nonferrous alloys such as brases, bronzes and solders, Estimation of C. S. Si. Mn and P in cast iron

and steel. Estimation of Cr, Ni, Mo, W and V in alloy steels. Determination of iron in iron ore, manganese in manganese ore, lime in lime stone, copper in copper ore, Fire assay of precious metals.

Instrumental Analysis : Importance and comparison, comparison with standard wet chemical methods. Fundamental physico-chemical principles involved and equipment required in colorimetry, absorptiometry, spectroscopy, potentiometry, amperometric titrations, coulometric titrations, polarography, conductometry, electroanalysis and flame photometry.

Paper 2—PRODUCTION OF STEEL

Historical development of steel making processes. Physical chemistry of carbon, sulphur, phosphorus, silicon and manganese reactions and deoxidation of steel. Gases in steel.

Bessemer process, construction of converters, acid and basic practice and modifications. Open hearth process raw materials, construction, slag and combustion control, acid and basic practice and their modifications.

Oxygen steel making processes viz. L.D., Kaldo, Rotar and other developments, raw materials and practice. Electric furnace construction, raw materials and practice. Special processes viz. duplex and side-blown converter. Continuous steel making processes. Ladle desiliconisation.

Types of products and metallic yields in the various steel making processes.

Casting pit practice, types of ingots and their products. Ingot defects and their control. Degassification of steel. Continuous casting of steel.

A critical appraisal of steel making industry in India.

Paper 3—PHASE TRANSFORMATION AND HEAT TREATMENT

Types of phase Transformation :

Nucleation and growth, shear massive, order disorder and spinodal transformations.

Principles of Heat treatment :

Formation of austenite on heating, factors affecting austenitic grain size, inherent austenitic grain size and its determination, importance of austenitic grain size.

Isothermal decomposition of austenite. concept of T.T.T. Curves, T.T.T. Curves for various steels kinetics of austenite to the

pearlite, bainite and martensitic transformations, partitioning of alloying elements in steel and their effect on phase transformation characteristics.

Precipitation Hardening :

Kinetics and mechanisms of precipitation hardening, changes in properties accompanying precipitation hardening. Important precipitation hardenable alloys. Dispersion hardening/Introduction to ternary equilibrium diagrams.

Heat Treatment Processes :

Stress relieving, normalising annealing, spheroidizing hardenability—its significance and determination, hardening and tempering variables affecting tempering characteristics of different steels, hard-tempering, austempering, patenting ausforming and maraging.

Case hardening carburising nitriding, flame hardening induction hardening, heat treatment of case hardened steels. Defects arising out of various heat treatment operations, their causes and prevention.

Paper 4—MINERAL DRESSING

Introduction, scope, objects and limitations of mineral dressing.

Comminution and Liberation: Laws of crushing. Theory and practice of crushing and grinding. Conventional units used for comminution, their fields of application and limitation. Sizing and classification : Laboratory methods of sizing and interpretation of sizing data. Industrial methods of sizing and various types of screens used Laws of settling of solids in fluid. Types of classifiers. Classification as a means of sizing. Concentration : Gravity concentration methods including Jigs spiral, shaking tables and heavy Media separation. Applications and limitations of each of methods. Froth flotation and physico-chemical principles involved therein. Flotation reagents and their functions. Flotation machine and flotation of simple sulphide and oxide ores.

Electro-static and electro-magnetic methods of concentration, amalgamation techniques of concentration. Dewatering and Drying theory and practice of thickening filtration and drying.

Coal Washing : Washability curves. Crushing, Screening and cleaning of coal by gravity and flotation methods. Dewatering and drying of coal.

Simplified flowsheet for the beneficiation of coal sample. ores of copper, zinc, lead, and manganese, Beach sands with special reference to India conditions.

Paper 5—GEOLOGY AND MINERALOGY

Introduction, weathering and their agents, geological work of river and wind.

Unit cell, open and close forms, simple forms and combination. interfacial angle, parameter system of weiss. index system of miller. symmertry elements and the details of the normal classes of crystallographic systems.

Megascopic study of rock forming minerals viz. augite, absos. agate, apatite, andalusite. beryl, biotite. calcite. garnet. hornblends, hypersthene, kyanite, orthoclase, microcline plagioclase, quartz, muscorite, lopidolite, olivine, sillimanite, tourmaline, sodalite, talc.

Microscopic study of minerals viz. quartz, orthoclase, microcline, plagioclase, muscovite, hypersthene, augite, hornablende and olivine.

Study of minerals of economic importance representing the following elements, with special reference to their mode of occurrence. specifications. reserves industrial applications and distribution in India.

Aluminium, barium, calcium, copper, chromium, coblat, nickel, gold, iron, lead, magnesium, magnganese, molybdenum, silver, tin, titanium, tungsten, zinc and zirconium.

Texture. physical properties, formation and origin of sedimentary, metamorphic and igneous rocks and their uses.

Classification and origin of folds and faults. elementary knowledge of strike. dip. joints. batholith. laccelith. dyka. sill, current, bedding, ripple marks, over lap, off lap, outlier. inlier and unconformity.

Principles of stratigraphy and the details of Aravalli. Delhi and Vindhyan systems, with emphasis on their economic importance.

Paper 6—FOUNDRY TECHNOLOGY

Present status of foundry industry in India. Scope and importance as a basic industry.

Patterns. functions and classification. Pattern materials and pattern allowances. Design considerations.

Molding materials. Mechanism of bonding. Parting and facing materials. Special active. Effect of variables on the properties of core and molding sands. Testing of molding sands.

Molding processes, green and dry sand, core and loam molding, plaster and permanent mold, centrifugal investment and diecasting. Shell molding and Co_2 process.

Solidification of castings.. Flow of metal in molds, Metal mold reactions. Principles solidification of metals and alloys, directional solidification, coring and segregation. Gates and risers. principles, nomenclature. Types of gates and risers.

Gases in metals and methods of degassification. Casting defects, causes and remedies. Salvaging, finishing and inspection of castings. Cast iron foundry practice. melting furnaces and recent modifications. Foundry characteristics of grey, white high duty, malleable and S.G. Cast iron.

Melting, alloying and casting practice of Al base and Cu base alloys.

Steel foundry practice.

Paper 7—FURNACE TECHNOLOGY

Elements of Heat Transfer: Steady state conduction, convection and radiation. Combined effect of the three modes of heat transfer. Measurements in heat transfer.

Furnaces : Principles of combustion, primary secondary and excess air. Flame characteristics. Natural, forced, induced and balanced draft. Temperature and atmosphere control. Heat loss in the furnaces and its minimisation. Water-heat recovery.

Gas flow in furnaces, Bernoulli's Euler's and Navier Stoke's equations. Characteristics of Nozzles. Critical pressure ratio. Design considerations for burners.

Classification of furnaces. General study of construction and operation.

Refractories: Acid, basic and neutral refractories, their compositions and properties. Methods of production of fireclay, silica, magnesite, chrome-magnesite, dolomite and insulating bricks. Selection of refractories for metallurgical applications. Testing of refractories.

Paper 8—NON FERROUS EXTRACTIVE METALLURGY

Review of theoretical basis of extraction and refining of the metals. Extraction and refining of aluminium, copper, lead, zinc, antimony, magnesium, titanium, tin, cadmium, silver and gold.

Recent developments, present practice and future perspect of non-ferrous metal industries in India and world.

Special methods of production of high purity metals, zone refining, ion exchange, solvent extraction, liquid extraction and thermal decomposition methods.

Recovery of metal values from metallurgical wastes. Treatment of secondary metals. Metallurgical fumes and smoke, pollution control.

ELECTIVE PAPERS :

(Any one of the following)

Paper 9(A)—POWDER METALLURGY

Powders: Principles and practices of metal powder production by various methods. Characteristics of powder and their correlation with methods of production. Mechanical and thermal treatment of powders prior to compaction. Compacting. Cold and hot pressing characteristics of green compacts, powder rolling, extrusion metal powders effect of various factors on the properties of green and sintered compacts.

Sintering: Factors affecting sintering, liquid phase sintering. Theories of sintering, properties of sintered compacts.

Products: Dense and porous materials, refractory metals, hard metals, electrical contact and magnetic materials, friction parts, dispersion strengthened materials.

Paper 9(B)—EXPERIMENTAL TECHNIQUES IN MET.

Vacuum techniques : Mechanical pumps, Vapour pumps, Discharge tubes, McLeod gauge, heat conductivity manometers, ionization gauges, leak detection, vacuum connections.

Temperature measurements and control. Temperature scales, Resistance thermometers, thermocouples optical and radiation pyrometers, Temperature controller and recorders.

Thermal methods : Thermal analysis of phase transformation, ordinary thermal methods, inverse rate curves, differential thermal analysis.

Dilatometric methods : Thermal expansion and volume changes, associated with phase transformations, ordinary mechanical and optical dilatometers, Differential optical dilatometers, Differential optical dilatometers.

Electrical resistivity measurement and its importance in metallurgy.

Introduction to electron microscopy and electron microcopy analyser.

Paper 9(C)—ENERGY ECONOMY AND POLLUTION CONTROL IN METALLURGICAL INDUSTRIES

Fuel Efficiency and Economy :

Present situation of energy sources in India. Fuel efficiency and fuel economy and its significance. Sources of energy in an iron and steel plant. Energy balance of an iron and steel plant. Modes of heat losses in various iron and steel making operations. Methods of achieving higher thermal efficiency. Role of instrumentation in achieving greater fuel economy.

Pollution Control :

Environmental pollution in metallurgical industries; solid, liquid and gaseous pollutants. Removal of soluble and particulate pollutants. The above would cover iron and steel, aluminium, copper, lead and zinc and other non-ferrous industries and also foundry industries.

Use of current literature for pollution, control problems.

Paper 9(D)—RATE PROCESSES

Review of properties of aqueous electrolytes, extended Debye-Huckel theory, Harned's Rule : Theory of emf cells, Electrode processes, Potential - P.H. diagrams.

Molten salts—their properties with special reference to chloride, oxide and silicate solutions.

Solid Electrolytes, Ionic and electronic conductivities, applications of solid electrolytes.

(Electrical Engineering—Electronics Option)

Paper 1 : Electronics-II

Syllabus is same as in

Paper 2: Circuit Analysis-II

Third Year Electrical Engg.

Paper 3—MICROWAVE ELECTRONICS

1. General Problem of Microwave Electronics :

Original concepts, Electron Transit time and Transit Angle, current conduction at microwave frequencies, electron beam energy transfer. Requirements of microwave oscillators and amplifiers.

2. Microwave Triodes and Terodes :

Microwave Triodes and their design problems, Microwave Tetrodes and their applications.

3. Klystrons :

Theory of Electron Bunching, Two Cavity Klystron Amplifier, Two Cavity Klystron Oscillators, Reflex. Klystrons, Applications of Reflex. Klystron.

4. Travelling Wave Tubes :

Description, Motion of an electron travelling with an electromagnetic wave, slow wave circuits, Practical considerations, Backward wave, travelling wave tube, Performance of travelling wave tubes.

5. Magnetron :

Magnetron Oscillators, Types of Magnetrons, Analysis of plane magnetrons, Cylindrical Cyclotron Frequency magnetron, travelling wave magnetrons, conditions for oscillations, Efficiency of travelling wave magnetrons, modes of oscillations and their separation, operating characteristics, Interdigital Magnetrons.

6. Microwave Solid State Devices :

Tunnel Diodes, Parametric Diodes, Gunn Effect Devices. Microwave integrated circuits.

7. Modern Amplifiers :

Masers and Lasers.

Paper 4—INTEGRATED ELECTRONICS

1. Operational Amplifier Fundamentals :

Introduction, Operational Amplifier Circuits, Circuit Details of Operational Amplifier 741, Characteristics of the Ideal Operational Amplifier, Operational Feedback Arrangements.

2. Operational Amplifier Analysis :

Inverting Configuration; Non-inverting Configuration; Operational Amplifier Specifications; Inverting versus Non-Inverting Configuration; Current Follower. Voltage Follower and Differential Amplifier Configurations; Operational Amplifier Impedances; Frequency Response and stability of Operational Amplifier.

3. Drift and Chopper Stabilization :

Choppers, Chopper Amplifiers. Analysis of Chopper Stabilized Amplifiers.

4. Mathematical Operations with Operational Amplifier :

Scale changing, Addition, Subtraction, and Averaging, Integration Differentiation, Solution of Differential Equations.

5. Waveform Generators :

Wien bridge oscillator, Operational Amplifier Comparator; Multivibrators.

6. Active Filters :

Transfer Functions, Pole Zero Diagrams and Bode Plots; First Order Active Filters; Second order Active Filters; Higher order Filters.

7. Further Applications of Operational Amplifier :

Instrumentation Amplifiers, Log and Antilog Amplifiers; Regulator Circuits; Phase Locked Loop—Operating Principle.

8. Digital I.C. Gates :

Basic Logic Gates, R.T.L. and D.C.T.L. Gates ; D.T.L. and H.T.L. Gates, T.T.L. Gate, E.C.L. Gate, MOSFET Logic Circuits.

Paper 5—ELECTROMAGNETIC FIELD THEORY**1. Electrostatics :**

Fundamental Relations of the Electrostatic Field, Gauss's Law, The Potential Function, Field Due to a continuous Distribution of charge, Equipotential surfaces, Divergence Theorem, Poissons Equation and Laplace Equation, capacitance, Electrostatic Energy, conditions at a Boundary Between Dielectrics.

2. The Steady Magnetic Field :

Theories of Magnetic Field, Magnetic Induction and Faradays Law, Magnetic Flux Density, Magnetic Field Strength and Magnetomotive Force, Ampere's Work Law, Permeability, Energy Stored in a Magnetic Field, Amperes Law for current element, Ampere's Force Law, Magnetic Vector Potential, Analogies between Electric and Magnetic Field.

3. Maxwells Equation :

Equation of continuity for Time Varying Fields, Inconsistency of Amperes Law Maxwells Equations. conditions at a Boundary Surface.

4. Electromagnetic Waves :

Solution for Free Space conditions, uniform Plane wave Propagation. Uniform Plane Waves. The Wave Equation for a conducting Medium, Sinusoidal Time Variations, conductors and Dielectrics.

5. Poynting Vector and the Flow of Power :

Poyntings Theorem; Interpretation of Poyntings Vector : Instantaneous, Average and Complex Poynting Vector: Power Loss in a Plane conductor.

Paper 6—ELECTRONIC MEASUREMENTS

1. Conventional Electronic Instruments :

Electronic Voltmeters, Diode Vacuum Tube Voltmeter, Transistor Voltmeter, Differential Voltmeter, A.C. Voltages, measurement. Current, Power and frequency measurement using Electronic-Instruments.

2. Cathode Ray Oscilloscope :

Cathode Ray Tube, C.R.O. Circuits, C.R.O. measurements

3. Instruments for Generation and analysis of Waveforms :

Singal Generators, Square Wave Generators, Wave Analysers, Harmonic Distortion Analyser.

4. High Frequency Measurements :

Measurements of Inductance, Capacitance and resistance at high frequencies, Q. Meter.

5. Digital Instruments :

Fundamentals of Digital techniques, Digital Frequency meter, Digital V. Voltmeter.

6. Theory of Errors :

Methods of reducing systematic errors in measurements. Statistical analysis of random errors. Normal error curve and its applications.

(Electrical Engineering—Electronics Option)

Paper 7 : Control System Engineering

Paper 8 : Pulse & Digital Electronics

Syllabus is same as in
Third Yr. Elect. Engineering.

Elective II (Electronics Option) I :

Any one of the following :—

Paper 9(a)—INDUSTRIAL ELECTRONICS

1. Induction and Dielectric Heating :

Introduction. conversion system for the production of high frequency for induction and dielectric heating. Induction heating. Dielectric heating and their applications.

2. Electronic Relay Circuits :

D.C. Operated and A.C. Operated Time Delay Relays.

3. Resistance Welding :

Ignitron Contactor for resistances welding, synchronous Control Circuit, Follow up Control Circuit, sequence of functions, Energy storage welding system, three phase welding system.

4. Generator E.M.F. Control :

Basic Circuit of a generator voltage regulator, Analysis of regulator performance.

5. Temperature Control of furnaces :

Bimetallic strip temperature control system, wheatstone Bridge temperature control system.

6. Photo Electric Devices :

Basic Photo Cell Relays and Counters, Photo electric smoke detector.

7. Metal Detector Circuits :

Conveyor belt metal detector, Electrical Metal detector.

8. Miscellaneous applications :

X-Ray Inspection, Electron Microscope, Nuclear Instrumentation.

Elective II (Electronics Option)(b)**Paper 9(b)—DIRECT ENERGY CONVERSION****1. Introduction :**

Energy Demands; Fuel Utilisation: Carnot efficiency; Conventional, alternative generation and Topper Devices; Criteria for Central Power Generation; Other uses of D.E.S.; conclusions.

2. M.H.D. Generation :

Introduction; Electrical conditions, Faraday and Hall Generator and their comparison; choice of generator parameters, velocity, magnetic field requirement, conductivity, seeding; Non-thermal, ionization methods; Recombination; Values of Beta, Flow conditions; Other Generator Configurations; Experimental aspects of M.H.D. Generation, direct replacement, open and closed cycle operation, liquid metal systems, alternating current systems.

3. Thermionic Generation :

Introduction: Thermionic emission; Basic diodes and its analysis; Selection of materials; Elimination of space charge, electrode spacing, crossed field devices, positive ion injection. low pre-

ssure caesium diodes. High pressure generators: Electrode materials; Experimental thermionic generation: Radio isotope sources: Reactor systems.

4. Thermoelectric Generation :

Introduction, See back, Peltier and Thomson Effect and inter relationship of their effects: Generator analysis; Material selection: Electrical resistivity and thermal conductivity and effect on material selection: Experimental thermoelectric generation. radioisotope fuelled generators, nuclear reactors; solar generators; Applications.

5. Fuel Cells :

Principle of Fuel cells; Design: Thermo-dynamics of fuel cells; choice of fuels and operating conditional Electrode structure and action: Polarisation; Basic Principles of Practical fuel cells of various types.

6. Further Energy Conversion Processes :

Miscellaneous Techniques, Radiation cells: Principles of the Ferromagnetic and Ferroelectric generation; controlled Thermonuclear Reaction; Fuels and reactions: Attainment of sustained fusion reaction; Methods of containment; Production of Plasma; Practical Devices; Future work and prospects.

Paper 9(c)—COMMUNICATION SYSTEMS

1. Spectral Analysis :

Fourier series, Sampling. Function, Response of a linear system: Normalised power and fourier expansion: Power spectral Density and its effect on transfer function; Parsevals Theorem: Power and energy transfer through network: Band limiting of waveforms. correlation. Autocorrelation of wave forms.

2. Random Variables and Processes :

Probability. Random variables. Distribution functions. Average value and variance of Random variables. Gaussian Probability Density. Error Function. Relative Probability Density. Correlation between Random variables. Random Processes. Auto correlation.

3. Modulation Systems :

(a) Amplitude Modulation systems—Amplitude modulators. single sideband transmission and balanced modulators phase shift method of S.S.B. generation Demodulation.

(b) Frequency Modulation: Frequency modulation. Narrow-band F.M.. Wideband F.M. generation of frequency modulation signals. Frequency demodulation.

- (c) Pulse Modulation: Transition of sine wave to pulse modulation, periodic sampling and sampled data system, sampling theorem, Demodulation of sampled signals. Introduction to pulse modulation, Pulse amplitude and position modulation.
- (d) Pulse Code Modulation: Noisy communication channels, Quantization of signals, Pulse code Modulation, Delta Modulation and its limitations, comparison of P.C.M., and D.M.

4. Noise :

Slot Noise, Thermal noise, signal to noise and noise figures, Available gain and overall noise figures, Noise in electron devices.

5. Comparative Analysis of Information Transmission System :

Signal and noise power spectra; detection of signal in noise; S/N ratio in F.M. and A.M.; Noise in P.C.M. and D.M.

6. Communication Systems and Noise Calculations :

Resistor Noise, Network with reactive elements, Available Power, Noise temperature, Two Ports Noise Band width, Noise Figure and temperature of a cascade; Example of receiving system, Antennas, A system calculation.

FINAL YEAR B.E. (Civil Engineering)

Paper 1—Structural Engineering Design-II.

1. Design of retaining walls-cantilever and counterfort types.
2. Flat slabs.
3. Design for torsion. Design of beams curved in plan with uniformly distributed loads only.
4. Shrinkage stresses and plastic flow.
5. Analysis of stresses in a R.C. Dome. Design of domes for axi-symmetric loads only like uniformly distributed load, ring load, concentrated load at the crown.
6. Design of underground and overhead rectangular and circular tanks. Intze tank (membrane analysis only). Design of staging. Principles of design of raft foundations.
7. Introduction to I.R.C. loading: Design of slab culverts, T-beam bridges and balanced cantilever bridges. Description of R.C. arch bridges.
8. Prestressed concrete—Advantage. Methods of prestressing; Losses of prestress; Design and analysis of a prestressed beam (excluding end block).

9. Elements of ultimate load theories: Design of beam by Whitney's theory, Design according to I.S. Code.

10. Yield line theory for slabs. Basic concept of the theory; Location of yield lines; yield line analysis—equilibrium and virtual work methods; Analysis of rectangular slabs with different support conditions.

List of Codes and Tables to be given in Examinations of Structural Engineering Design-III :

1. I.S.: 456-1978 Code of practice for Plain and Concrete.
2. I.S.: 875-1964. Code of practice for Structural Safety of Buildings: Loading Standards.
3. I.R.C. Bridge Codes—

Section—I	: General Design Features
Section-II	: Loads and Stresses
Section-III	: Cement Concrete, Plain & Reinforced.

Paper 2—PUBLIC HEALTH ENGINEERING

(a) Water supply engineering :

Water supply, sources of water supply. Collection of surface and ground water, Lake and river intakes.

Quantity of water per capita. Variation in seasonal and, hourly consumption. Forecast of population.

Chemical and bacteriological analysis of water. Standards of water, quality for drinking.

System of water works. Plain sedimentation. Quiescent and continuous flow types of tanks. Coagulation. Use of alum ferric chloride and other chemicals as coagulants. Determination of coagulant dose by jar test. Methods of feeding coagulants. Mixing of coagulants. Flocculation. Filtration Design and functional aspects of slow sand, rapid sand filters. Disinfection use of chlorine Chloramines, ozone and ultraviolet rays for disinfections. Lime soda process for water softening.

Different types of pipes joints and valves used in water supply practice. Distribution of water. Design of distribution systems. Service reservoirs. Alignment, laying and joining of pipes. Service pipes, fittings and connections. Detection and prevention of waste of water Motoring. Rural water supply.

(b) Sanitary engineering :

Separate, combined, and partially combined systems of sewerage. Forms, cross section, and inclination of sewers Constr-

ction and maintenance of sewers. Ventilation of sewers. Testing of sewers. House drainage: Conservancy and water borne systems. Stoneware pipes, tappers. bends and junctions.

Intercepting trape grease traps, gulleys, Water closets, cisterns, urinals, baths and lavatory basins. Soil waste and antisiphonage pipe.

Strength and composition of sewage. Chemical and biochemical oxygen demand.

Principle of sewage treatment. Aerobic and anaerobic bacterial action. Sewage screening, Grit separation, sewage pumping. Disposal of sewage by dilution, Self purification of streams. Disposal of sewage on land. Sedimentation. Septic tanks and Imhoff tanks. Contact beds and tricking filters. Activated sludge process. Sludge volume index. Recirculation of sludge. Design, working and maintenance of anaerobic digesters. different methods of sludge disposal. Oxidation ponds. Oxidation ditches Rural Sanitation. Collection and disposal of refuse; Composting. A brief idea about industrial waste problem.

Paper 3—IRRIGATION AND WATER POWER ENGINEERING

Introduction :

Definition, scope, necessity, system of irrigation, advantages and disadvantages, aim extent of irrigation. Irrigation methods, assessment of irrigation water; modern concept of applying irrigation water to land. Well irrigation. Construction of wells. Comparison between canal and well irrigation.

Soil Water and Crops :

Soil-types and their importance to an irrigation engineer.

Sources of irrigation water, soil-water relationship. Elementary idea of field capacity and wilting point.

Main crops of India, crop seasons, Duty-Delta and relation between them. Maintenance of soil fertility, Crop rotation, Irrigation water quality.

Evaporation and Transpiration. Factors affecting evaporation. Determination of Evaporation, Transpiration. Evapotranspiration Water requirements of crops.

Reservoirs and Dams :

Servoirs--Types of reservoirs, Physical characteristics of reservoirs, Reservoir yield, selection of capacity for reservoirs, yield from

a given reservoir. Mass curves. sediment transport by streams, Reservoir sedimentation. Reservoir sedimentation—control, Free board reservoirs. Reservoir site selection.

Dams—Types of dams. Forces on dams, Gravity dams. structural stability of gravity dams. Elementary analysis of gravity dams. Constrution of gravity dams. Arch dams—General considerations. Elementary design of arch dams. Buttress dams—General considerations only. Earth dams—General considerations only.

Spillways, Gates and Outlet Works :

Spillways—overflow, Chute, Side channel, shaft, siphon. Auxiliary and Emergency spillways. Dynamic forces on spillways.

Crest gates—Flashboards, stop logs and needles, vertical lift gates, radial gates, rolling gates, bear-trap gates, drum gates.

Outlet works—Sluice ways, Intakes, Trashracks, Entrance gates, valves. Gate Installations. Hydraulics of outlet works.

Protection against scour below dams, different types of energy dissipators.

River Engineering :

Classification and stages of rivers, Meandering. Cutoffs, Methods of river training—embankments, guide banks, spurs, artificial cutoffs, bed pitching and bank revetment, dredging.

Canal headworks :

Site selection, component parts, weirs and barrages—Bligh and Khosla theories, causes of failures and remedial measures.

Irrigation Canals :

Classification. canal aligement, perennial and inundation canals, site selection and design consideration for inundation canals: Design of irrigation canals. Kennedy and Lacey theories, limitations, use of design diagrams. Introduction to Tractive force approach and Shield's method of design of canals. L—Section and cross-section of irrigation channels, spoil banks, borrow-pits, land width. Construction and maintenance of canals. losses, lining of irrigation canals. Canal masonry works—cross drainage works, regulators, falls, flumes, cutlets, tail clusters, silt ejectors, silt extractors, escapes, bed-bars.

Water Resources Engineering :

Planning for water resources development: Data needed for planning, Project formulation. Project analysis. Some common

pitfalls in project planning, augmentation of water supplies. Functional requirements in multiple purpose-projects. Compatibility of multiple-purpose uses.

Flood Control :

Flood control reservoirs : purpose location, size and operation problems. Flood ways channel improvement. Evacuation and flood plain zoning. Land management of Flood control. Economics of flood control.

Land Drainage :

Causes and remedial measures of water logging and salt efflorescence, land drainage, drainage ditches, under drains, flow of ground water to drains, layout of tile drain system. Design of land drainage system, drainage by vertical wells.

Water Power Engineering :

Hydro-electric power development in India. Comparison of thermal and hydroelectric power, costs, power systems and load, Hydroelectric power terms, Types of hydroelectric plants. General arrangement of a hydroelectric project, Forebay, Penstocks, power house, Tailrace. Planning the hydroelectric power development.

Paper 4—SOIL MECHANICS AND FOUNDATION ENGINEERING-II

1. *Stresses in soil under surface loading* : Vertical pressure and its distribution in a soil mass. Boussinesq's and Westergaard's equations for vertical stress due to a point load and its application. Approximate methods of obtaining vertical pressures due to surface loading. Newmark's chart. Pressure bulb and its significance in foundation exploration.

2. Compressibility and consolidation. Compression Index Swelling Index, coefficient of compressibility, coefficient of vol. change and their inter-relationship. Pre-consolidation pressures and its determination. Terzaghi's model and theory of one dimensional consolidation of soil; coefficient of consolidation, time factor, present of consolidation.

Consolidation test : Methods of predicting final settlement and its rate. Total and differential settlements.

3. Stability of slopes by Swedish and Friction circle method. Taylor's stability number curves. Stability of slopes under sudden drawn condition in dams.

4. *Earth Pressures* : Active, passive and at-rest earth pressures. Rankine's and Coulomb's theories: Rebhann's and Cul-

mann's graphical method for active earth pressures on vertical and inclined back retaining walls, horizontal and slopping cohesionless backfill. Stability analysis of retaining walls. Earth Pressure on cantilever sheet pile rigid bulk heads.

5. *Bearing capacity of Soils:* Shallow foundation Terzaghi's and Meyerhoff's formulae for bearing capacity. Plate loading test, standard penetration test, dynamic and static cone tests. Modulus of subgrade reaction. Pressure distribution below foundations. Minimum depth of foundation by Rankine's method.

6. *Piles:* Function classification, bearing capacity of piles, pile formulae. Pile load test, groups of vertical Piles, arrangements and properties. Well foundation and caissons, parts, methods of construction, forces setting on well, analysis of a well foundation under lateral load by ultimate strength concept of rigid bulkheads.

7. *Site investigation.* Depth of exploration. Disturbed and undisturbed samples. Types of samplers. Brief description of procedure of bearing and sampling. Transport and storage of samples.

8. *Machine foundations.* Effect of vibration on soil properties. Soil dynamics; Free and forced vibration with and without damping, their equations and interpretation of the solutions. Natural frequency of foundation soil system Berken's method.

9. *I.S. Code of practice for design of foundation for reciprocating and impact type of machines.*

10. *Foundation problems associated with vibration and their solution; prevention and isolation of vibration from external sources such as machines or earthquakes.*

Paper 5—STRUCTURAL ENGINEERING DESIGN-IV.

1. *Steel bridges.* Economical span: permissible stresses; Standard loading for railway bridges.

2. *Through and dock type plate girder bridges.*

3. *Trussed bridges.* Various types of bridge trusses; Limiting spans; Principles of design for through and deck types trussed bridges; Design of stringers, cross girders and main girder; Lateral bracings sway bracings and portal bracings.

4. *Different types of end bearings; Design of rocker and roller bearings; Use of high tensile belts in joints of bridge trusses (description only).*

Water tanks. Circular tanks with segmental bottoms; Rectangular tanks; Pressed steel tanks; Design of staging.

6. Analysis of statically determinate space frames by tension-coefficient method. Steel towers.

7. Plastic analysis of steel structures. Fundamentals; Statical and Mechanism methods of analysis; Bending of beams of rectangular and I shapes, Analysis of simply supported beams, fixed beams, continuous beams and single span rectangular frames.

List of Codes and Tables to be given in examinations of the Structural Engineering Design IV :—

1. I.S. : 800-1962. Code of practice for Use of structural steel in General Building Construction.
2. I.S. : 875-1964. Code of practice for structural safety of Buildings: Loading standards.
3. P.R.B.: 182 (N)—1962 Indian Railway code of practice for Design of Steel or wrought Iron Bridges (Steel & Bridge Code).
4. P.R.B. : 194 (N) Bridge Rules 1964.
5. I.S. : Hands Book for structural steel sections.

Paper 6—ENGINEERING HYDROLOGY

A. Surface Water Hydrology :

1. *Introduction* : Hydrologic cycle, Hydrology in engineering, weather and hydrology.

2. *Precipitation* : Formation and forms of precipitation, measurement of precipitation, Interpretation of precipitation, data, variations in precipitations, snowpack and snowfall, evaporation.

3. *Streamflow* : Water stage, stage-discharge relations, interpretation of streamflow data, streamflow variations, streamflow hydrographs: recessions, hydrograph separations, total runoff, unit hydrograph, synthetic unit hydrograph, peak-discharges by empirical formula, unit hydrograph and rational formula.

4. *Streamflow routing* : Storage equation, reservoir routing, routing in river channels, deriving basin outflow by routing.

5. *Relations between precipitation and runoff* : Infiltration estimating the volume of storm runoff, estimating snowmelt runoff.

6. *Statistical methods in hydrology* : General probability concepts in hydrology.

Flood peak frequency—graphical methods and elementary computations. Flood volume frequency, regional frequency analysis.

B. Ground Water Hydrology :

7. *Occurrence of groundwater*: Origin of ground water, geological formations of aquifers, types of aquifers, groundwater basins, springs.

8. *Ground water movement*: Darcy's Law, permeability, tracing ground water movement, general flow equations.

9. *Ground water and well hydraulics*: Steady unidirectional flow, steady radial flow to a well, unsteady radial flow to a well nonequilibrium equation for pumping tests, well flow near aquifer boundaries, Image wells, multiple well systems, partially penetrating wells. Testing wells for yield, infiltration galleries.

10. *Basin-wise ground water development*: Safe yield, methods of computing safe yield, equation of hydrologic equilibrium, conjunctive use of surface and ground water reservoirs. Ground water prospecting, geophysical explorations, artificial recharge of ground water, sea water intrusion in coastal aquifers.

Elective III :—Any one of the following

Paper 7(a)—ADVANCED TRANSPORTATION ENGINEERING

1. *Introduction*—Transport System—their classification, intrinsic merits and suitability, Methodology of planning transport systems—Transport surveys, Generation, Distribution, Assignment, Modal split and Evaluation including Mathematical Modelling.. Mass transit systems—Planning Design and operation.

2. *Traffic studies*, viz., Traffic volume study, Origin Destination study, speed and delay study, parking study, and Accident study their objectives, methods, analysis and interpretation. Concepts of traffic arrangement, roadway capacity and levels of service. Geometric improvement intersections. Street lighting. Impact of traffic on environment.

3. *Railway track components*, viz., Rails sleepers, ballast, formation and fittings—their types, functions, requirements and comparison. Rail joints and welded rails; wear of rails, creep of rails, stations, station yards and sidings; Mountain Railways, Railway crossings, Points and crossings, and track junctions and modern trends on world railways. Railway signalling, interlocking and control systems; Modern methods of track maintenance; Maintenance organizations; Modernization of track for high speeds.

4. Air transportation—Agencies, Technical terms relating to airways and Airports. Aircraft characteristics affecting airport design; Airport layout; Airport obstructions; Runway and taxiway designs; overlays; terminals; Runway marking and lighting; drainage; heliports; Vertical takeoff systems.

Elective:

Paper 7(b)—ADVANCED WATER RESOURCES AND WATER QUALITY MANAGEMENT.

A. Water Resources :

1. *Economic Analysis for Water Resources Projects:* Basic objectives and principles, benefit-cost analysis, cost-effective analysis, utility function, criteria for project design and selection.

2. *Modern irrigation methods:* Furrow and border strip irrigations, sprinklers, drip irrigation. Modern methods of determining water requirements of crops.

3. *Water Resources Systems:* Elementary concepts of systems engineering in water resources. Applications of linear and dynamic programming. Simple optimization models in water resources.

4. *Water Resources Management:* Hydrology of arid and semi-arid lands, droughts, drought management, flood plain management, command area development.

B. Water Quality Management :

5. *Stream sanitation:* Stream sanitation : Patterns of pollution and natural purification, parameters of pollution, rates of bacterial self purification, dissolved-oxygen sag, Streeter Phelps equation, self purification of stream.

6. *Ground water pollution :* Sources and modes of ground water pollution, transport of pollution, Measures for pollution control.

7. *Advanced methods of wastewater treatment:* Introduction to recent developments of physical, chemical and biological methods of secondary and tertiary treatment of waste water. Desalination of water.

8. *Systems Approach to water quality management:* Introduction to simple optimization models for water quality management. models for determining optimal sizes of water treatment and wastewater treatment systems.

Elective:

OR 7(c)—PRESTRESSED STRUCTURES

1. *Basic philosophy of prestressing:* Various techniques of prestressing with and without prestressing cables; Different system of prestressing.

2. *Prestressing of concrete structures:* Analysis and design of beams camber, deflection, cable layouts, stretching in stages, design of end blocks: Ultimate strength in flexure and shear.

3. *Statically indeterminate structures:* Continuous beams. concordant cables, linear transformation.

4. *Tension members:* Circular prestressing—prestresses tanks.

5. *Compression members:* Piles.

6. Load balancing method.

7. *Partial prestressing:* Composite construction.

8. Prestressing of steel structures. Various techniques of prestressing of steel structures.

IV YEAR

(Electrical Engineering)

Paper I—POWER ELECTRONICS

1. Power semi-conductor Devices:

Power Diode. Power Transistor S.C.R., their construction. operation and characteristics.

2. S.C.R. :

Characteristics—different modes of operation: gate characteristics; Turning on and turning off phenomena; specifications and ratings.

3. Methods of turning on and off of S.C.R. :

Use of UJTs. saturable reactors. schmitt triggers and blocking oscillators etc. Methods of turning off S.C.Rs: Series operation: Parallel operation: series-parallel operation. Methods of triggering S.C.Rs. in above connections. String efficiency

5. S.C.R protection circuits :

Protection against over-current and voltage surges.

6. Applications of S.C.Rs. :

Polyphase rectifiers, overlap, Voltage control, Inverter operation. Phase controlled rectification and inversion. Cyclo-converter-principle of operation D.C. Motor speed control-armature and field control. Induction motor speed control by stator voltage control.

Paper 2—ELECTRIC DRIVES & TRACTION

1. Electric Drives :

Specifications, Rating of machines, Short term, continuous and special ratings. Types of motor enclosures and their respective field of application. Characteristics of load. Review of starting and running characteristics of various D.C. and A.C. industrial motors. Relative study of efficiency, power factor, size and costs. Starting and speed control of motors. Electric braking, Plugging, Rheostatic braking, regenerative braking. Behaviour of motor during starting, acceleration, braking and reversing operations. Speed-time relations. Load equalization—Use of flywheels. Determination of motor rating for intermittent loads.

Drives for Machines tools, lifts and cranes, paper mills printing machinery, rolling mills etc.

2. Electric Traction :

Systems of Electric traction, power supply systems for Track Electrification—Comparison and application of different systems.

3. Traction Mechanics :

Types of service, speed time and speed distance curves, average and schedule speed, Tractive effort, Estimation of power and energy requirement: Specific energy consumption, Mechanics of train movement. Coefficient of adhesion, adhesive weight, effective weight.

4. Traction Motors :

D.C. and A.C. traction motors, special requirement of selection of type. Speed torque/current characteristics.

5. Traction Motor Control :

Various methods of starting and speed control of D.C. and A.C. drives used in traction. Series parallel starting, shunt and bridge transition, drum and contacted type controllers. Metadyne control, Multiple unit control. Master controllers.

6. Braking :

Methods of Electric braking of traction Motors. Mechanical Regenerative braking.

7. Means of Supplying Power :

Sub-station equipment and layout. Feeding and distribution systems. Overhead equipment, current collection gear, Negative Boosters.

8. Train Lighting :

Systems of train lighting, special requirements, methods of obtaining unidirectional polarity and constant output.

Paper 3—SWITCHGEAR AND PROTECTION

1. Causes and consequences of dangerous currents; Faults overloads and switching overcurrents. Basic idea of an overcurrent relay as a level detector; symmetrical three phase faults calculations: calculation of sub-transient, transient and steady state fault currents: current limiting reactors; their construction, location and rating.

2. Selectivity, Discrimination, Sensitivity, Reliability of Relays, Fastness of operation. Upper and lower limits for the time of relay operation. Current grading, Time grading and Inverse time operation.

3. Directional operation of relays, construction of an electromagnetic directional element, directional element to be realised from rectifier bridge circuits. Connection of directional elements and their operating characteristics.

4. Distance protection of transmission lines, construction and characteristics of Impedance relays, C.T. & P.T. connection for Distance Protection. Effect of Arc Impedance on distance relay performance.

5. Carrier current Protection of Transmission lines. Basic apparatus used for Power Line carrier system. Principle of operation of directional comparison and phase comparison carrier protection.

6. Protection of Synchronous generators & Transformers; Faults in stator winding of Alternators. Differential protection; effect of resistance in the star point earthing. Single and multiple ground faults on the rotor, protection against these.

Differential protection of 3 phase transformers, effect of magnetising inrush currents and methods of minimizing the effects; Buchholz Protection.

7. Basic Ideas about static Relay; Advantages and disadvantages of Static relays, concepts of level detection. Amplitude comparison and Phase comparison.

8. Classification of Switchgear and fields of application and relative merits. Theory of current interruption energy balance and recovery rate theories, Practical systems of arc quenching in oil circuit breakers. Construction and operation of Bulk oil, Air Blast and Minimum Oil circuit breakers.

9. Recent trends in H.V. circuit breakers—Use of Sulphur Hexafluoride, Vacuum circuit breakers. Rating of circuit breakers, Testing of circuit breakers.

Paper 4—ELECTRICAL MACHINE DESIGN:

Basic principles of Electrical Machine Design. Output coefficient, Specific Loadings, Specifications. Types of the Insulating Materials.

Temperature rise in machines for continuous and intermittent ratings. Heat dissipation. Methods of ventilation and cooling.

Magnetic materials and allowable flux densities. Calculation of magnetic circuits. Real and apparent flux density. Tapered teeth. Carter's coefficient. Magnetising current. Leakage fluxes and reactances. D.C. and A.C. armature windings. Single layer and double layer windings. Fractional Slot windings. Calculation of performance from design data: losses, efficiency and voltage regulation.

Application of the above design principles to the following design :

- (a) Synchronous Machine Armature
- (b) Synchronous Machine Field System
- (c) Transformer Core
- (d) Transformer winding.

Paper 5—POWER SYSTEM ENGINEERING

1. *Generation* : Economic loading, Incremental rate curves, Reserve capacity of stations, Interconnection of stations, Elements load of frequency control; Flat frequency, tie-line load bias control.

2. *Load Flow Analysis*: Static Load Flow Equations (S.L.F.E.) System variables. Solution of S.L.F.E. Bus classification. Formation of Y Bus Primitive Network, Bus incidence matrix. Load Flow problem. Gauss, Seidal and Newton Raphson methods for solution, comparison of methods. Description of Load Flow programs.

3. *Voltage Regulation*: Voltage control, voltage control by generator excitation—Tap changing transformers, phase angle con-

trol, phase shifting transformers. induction regulator. Automatic voltage regulator. Excitation System—Static excitation systems.

4. *Power System Stability*: Meaning of Power System stability. Steady State and transient stability. Power limits of transmission lines. Representation of Synchronous machines. Inertia constant. Swing equation (Solution of Swing equation not included). Introductory explanation of equal area criterion. Factors effecting stability.

Paper 6—ELECTRICAL MACHINES III

1. *Synchronous Machines* : Transient Behaviour Reactances. Symmetrical Short Circuit—Concept of stability and Equal area criterion.

2. *A.C. Commutator Machines*: Action of Commutator in A.C. Machines—Function of Brushes—Concept of Phase Advancing Voltage. Injection and continuous speed control Series, Shunt and Scherbius Regulating Machines, Scharge Machine.

Single phase series and Repulsion motors.

3. *Cross Field Machines*: Theory and Operation of Metadyne and Amplidyne. Applications.

4. *Special Machines*: (Only qualitative treatment) Linear Induction Motors, Reluctance Motors, Hysteresis motors, Stepper Motors. Homopolar Machines.

Elective III E :—Any one of the following

Paper 7(a)—POWER SYSTEM ANALYSIS

Definitions and fundamental concepts: percent and per unit quantities. driving point and transfer impedances. The single line diagram for a balanced system. Equivalent circuits for two, three and four terminal networks. Equivalent circuits of transformers, transmission lines and synchronous machines. Three phase faults and methods for analysing them. Symmetrical components: Basic equation for three-phase systems. Power in a three-phase circuit in terms of symmetric components. Short circuits (unbalanced faults) on systems with one power source. Impedance and network. Zero-sequence equivalent circuit for transformers. shifts in phase of positive and negative sequence components in passing through star-delta transformer banks. Unsymmetrical faults on normally balanced three phase system with and without star-delta transformers between faults. analysis of Unsymmetrical Three Phase circuits by the method of symmetrical components. sequence impedances for a normally unbalanced system. Analysis of power system using alpha-beta and Zero-phase sequence components.

Paper 7 : *Elective-III (E) b—*

COMPUTER ENGINEERING

Analog Computer :

Theory of Analog computer, Computing elements: Operational amplifiers, potentiometer, address, multipliers, Integrators and function generators. solutions of differential equations, time and magnitude scaling. Introduction of initial conditions.

Simulation of control systems. Applications.

Digital Computer :

Analog Vs. Digital computer : Basic layout of digital computer, Input-output devices, memory organisation—Flip-flop registers, Cold storage and other modern memory elements, Digital arithmetic, computer logic, counters, Comparators, addition, subtraction, Multiplication, division, Basic control functions.

Microcomputer and their applications.

Paper 7 : *Elective-III (E) c:*

MICROPROCESSORS & INTEGRATED CIRCUITS

Part A : Integrated Circuit Electronics :

1. *Introduction to operational amplifiers* ; Operational Amplifier Analysis, Inverting and Non-Inverting configurations, Specifications, Frequency response.

2. *Mathematical Operations with Operational Amplifier* : Wave form Generators using Operational Amplifier; Active Filters using, Operational Amplifier; Regulator Circuits and Instrumentation Amplifiers using Operational Amplifier; Log and Antilog Amplifiers using Operational Amplifier.

Part B : Microprocessors:

1. Introduction to Microcomputer and Microprocessors.
2. Soft Wave: Machine Language, Symbolic Language, Fundamentals of programming in Assembly languages.
3. Introduction to Interfacing and Peripheral Devices.
4. Description of commonly used microprocessors.
5. Design Methodology and Examples of Microcomputer Applications.

FOURTH YEAR (MECHANICAL)

Paper 1—DYNAMICS OF MACHINERY-III

Vibrations :

Theory of one, two and multi-degree freedom system free vibrations. Longitudinal, transverse and torsional vibration Calculation of dynamic stresses.

Damping, Different types of damping with application of the viscous coefficient concepts.

Forced Vibrations :

Steady and transient states. Torsional vibrations of multi-rotor systems upto three rotors and gear systems. Transverse vibration of multimass systems. approximate methods of determining natural frequencies and modes. Critical whirling speeds of shaft and rotors. Calculation of Dynamic stress.

Transmissibility :

Vibration isolation silent blocks. Dynamics vibration absorbers. Machine foundation practice. Design and consideration of Machine Tool beds. Vibration measuring instruments.

Application of numerical, graphical and analogy methods in vibration problems. Electrical Analogy—Voltage force analogy, current force analogy. Analogue circuits for longitudinal, transverse and torsional vibration systems including geared systems.

Noise :

It's harmful effects. Vibrations as the major cause of noise. Decibels. Determination of the noise level by simple calculations.

Instrumentation :

Theory of Errors: Definition, classification, stabilities, length squares, probability estimation.

Strain gauges : Equipment, stress coat and other techniques.

Instruments for measurement of Acceleration. Vibration Soundstress.

Transducers : Accelerometers, Vibration pick ups, torsion meters with inductive, piezoelectric and photo cell effect.

References :

1. Grover, G.K., Mechanical Vibrations, Nem Chand & Bros.
2. Pujara, K.K., Vibration Engineering, Dhanpat Rai & Sons.
3. Pujara, K.K. Noise Engineering, Dhanpat Rai & Sons.

Paper 2—MACHANICAL ENGINEERING DESIGN-II

Problem recognition and definition: formulation of open ended problems, feasibility study.

Optimum basic Design : Synthesis of solutions. Selection of a particular solution after Evaluation. Synthesis and analysis of machanisms.

Human Factors in Engineering : Man machine systems. Logical arrangement and direction of movement of operating control like handles, Wheels and foot pedals to adopt the geometry and capability of human body.

Detailed design: Selection of optimum shape and size. Different optimization techniques including preliminary discussion on linear programming.

Modelling: Models for engineering systems. Types Uses. Mathematical models, Analogies--Membrane, Hydrodynamics and Electrical.

Experimental Design: Electrical resistance strain gauges, Brittle coating and Photo clasticity. Measurement of static and dynamic strains.

Fatigue failure : Crank initiation and prolagation. Cumulative damage and statistical design considerations for limited life. Random fatigue and Reliability.

Optimum Design: Of axially loaded members. Shafts and helical springs.

Hydraulic operation and control of machines. Simple performance characteristics of pumps, motors and valves.

Machine Tool Design: Design of beds, frames, columns and drives—spindle, power screws and gear boxes.

Miscellaneous : Design of press and shrink joints and discs revalving at high speeds

References :

1. Dally, J.W. and Riley, W.F., Experimental stress Analysis. Mc Graw-Hill books.
2. Koeinsberger, Principles of Machine Tool Design.
3. Pujara, K.K. and Juneja, B.L., A text book on Machine Design.

Note :—The above set of references are purely selective. Other texts also are to be as and when necessary.

Paper 3—PRODUCTION TECHNOLOGY-II

1. Jigs & Fixtures :

Introduction. Definition and difference. usefulness of jigs and fixtures. design considerations. materials used. principles and methods of location. clamping elements. jig bushes, drilling jigs, fixtures for milling. turning. boring and welding. assembly fixtures. indexing devices. materials for jigs and fixtures. Economies of jigs and fixtures.

2. Forging and Press Tool Working :

Forging-machines and accessories. hammer and drop forging, dies and tools. principles of forging tool design.

Press-tool working—introduction, properties of the materials to be press worked. work hardening. plate bending. Calculations of stock length. Press tool for piercing and blanking. Design of punch and die sets. Classification of press tools. simple. progressive and compound press tool. calculation of blank size determination of stages of operation and load in drawing. combination press tools. Mechanical handling of parts in sheet metal industry.

3. Gear Manufacturing Processes :

Introduction. Methods of forming gears hot-rolling. stamping power metallurgy. extruding. coil coining etc; Shear cutting of gears-template process. Gear generating process—gear hobbing. gear shaping Bevel gear generators. Gear finishing processes—Shaving. grinding. lapping. shot-blasting. phosphat coating. Gear testing.

4. New Machining Methods :

Types of machining methods. Hot machining, explosive forming Electric discharge machining (E.D.M.) Electrochemical machining (E.C.M.) Ultrasonic machining (U.S.M.) Electron beam machining (E.S.M.) Laser beam machining (L.B.M.) Abrasive jet machining (A.J.M.) plasma Arc machining (P.A.M.) Economies of machining.

5. Special purpose machine tools :

Automatic Lathes. Capstan and turret lathe machines, swiss automatics Operational planning and turret tool layout sequence of operations, economic batch quantity, production tooling arrangement, selection of cutting speeds, and feeds, calculation of machining time, cutting offtime, total time, and production rate.

6. Introduction to Numerical Controlled Machine Tools and Transform Machines, Numerical Control Systems, binary code system. General classification, economics, applications and limitations of N.C. & transfer machines.

7. Design of Single-point Cutting Tools :

Introduction, functions of various tool angles, design of single point turning tool, parting tool, emperical determination of force components, optimum value of tool angles, circular form tools, designing form tools.

8. Design of Millin Cutters :

Introduction, angle of contact force analysis, approach through dimensional analysis, force and power consumption, tooth form and cutter design.

References :

1. Tool Design By: S.K. Basu I.B.H.
S.M. Mukerjee
R. Mishra
2. Production Engineering By: P.C. Pandey Standard
C.K. Singh Publishers.
3. Tool Design A.S.M.E.

Paper 4—TURBOMACHINERY

1. Dimensional Analysis & Dimensionless Parameters:

Geometric, dynamic and kinetics similarity, Model testing Distorted models. Specific spread. Pressure co-efficient, discharge coefficient. power coefficient, reaction coefficient, characteristic co-efficient, Aerodynamic efficiency.

2. Energy transfer between a fluid and rotor : Euler equation. Impulse and reaction, Alternative form of Euler equation.

- (a) *Compressors*: Basic equations for radial flow, axial flow and mixed flow compressors. General analysis, theoretical headdischarge relationship. Two stage velocity diagrams.

- (b) *Centrifugal compressors*: Principle of operation: basic constructional features: types of impellers; volutes and diffusers work done and pressure rise; compressibility effects; calculation of dimension of the main components; compressors characteristics; surging and choking. Application of compressors to super charging and gas turbine power plant.
- (c) *Axial Flow Compressors*: Basic constructional features; elementary theory. degree of reaction, vortex theory; simple design calculations. introduction to blade design cascade test; compressibility effects; operating characteristics stalling and surging.

3. *Steam Turbines*: Basic equations for efficiency and utilization factor for radial flow. axial flow. impulse, reaction and fifty percent reaction turbines. Methods of reducing rotor speed. Velocity diagrams for two stages calculation of main blade dimensions thrust theoretical power and torque.

Classification, base load, auxiliary, pass out, exhaust and back pressure turbines. Combinations of cylinders and flow. Special constructional features of steam turbines.

Lubrication systems. Governing-Throttle control. nozzle centre and by-pass governing. Governors: mechanical oil relay and emergency trip governors. Starting and stopping procedure. Performance and operating characteristics of steam turbines. Machining of model boilers and steam turbines.

4. *Gas Turbines*: Multishafting. Design of combustion chambers. Gas Turbine fuels and fuel systems. Application to propulsion. Closed gas turbine cycle—advantages over open cycle and steam plants. Selection of pressure limits and pressure ratios. Application to binary vapour and nuclear plants. Combination of gas turbines with steam turbines and free piston gasifiers.

Matching of turbines and compressors.

Reference for Books :

1. Gas Turbines by Khajuria Dubey.
2. Gas Turbines by Mathur, Sharma
3. Steam Turbine Theory & Practice by Keaston.

Paper 5—REFRIGERATION & AIR CONDITIONING:

Air Refrigeration Plants : Air cycles, heat pump cycle, bootstrap system and its application in air craft air conditions.

Vapour Compressor Plant : Use of multistage compressors heat exchangers, receivers, precoolers and flash chamber their effect on C.O.P. Compression refrigeration machines, their characteristics and constructional details Compressors--open, sealed and semisealed units, capacity control compressor, installations, compressor performance evaporations their, performance, and control application considerations. Condensers, performance and application considerations, types common refrigerants and refrigerant mixtures.

Vapour absorption plants : System components--Generator, rectifier, condensers, absorber heat exchanger and water pump properties of Aqua--Ammonia and lithium bromide and water system Vapour absorption plants.

Control : Basic considerations methods of control, Control of temperature, pressure, humidity and dew point. Types of controllers pneumatic and electric. Year round control system. Automatic controls and safety devices.

Maintenance and trouble shooting.

Estimating Requirements : Heating cooling, humidifying and dehumidifying requirements. Losses : Building transmission, infiltration and air charges. Heat gain from people, light and power duct heat gain. Winter and summer design conditions. Supply air quantity and temperature requirements--supply duct air leakage.

Heating system : Introduction to hot water, steam and air heating systems. Piping and accessories.

Ducting System : Pressure losses in ducts, duct materials and sizing--design of return and exhaust, Duct heat gains and losses--Heat insulation Air leakage and duct maintenance. High velocity and high pressure air distribution. Direction and volume control. Outlet location return and exhaust grilles.

Humidification: Evaporative cooling.

Humidification & dehumidification : Evaporative cooling wet water cooling. Air washers and Air cleanliness. Maintenance of air washers.

System planning : Preliminary layout-load estimate system, design-zoning methods, Analysis and economics.

Commercial & Industrial Systems : Air conditioning multi-room structures, offices, apartment, house, hospitals, Hostels, Restaurants, Theatres and Libraries Air conditioning of factories,

textile mills, pharmaceutical plants. Applications to cold storage, food preservation, water coolers, ice manufacture and display cases. Transportation air conditioning Load estimating, process requirements, system selection.

Reference :

1. Refrigeration by Patel.
2. Refrigeration by Demkunderan.

Prper 6—POWER PLANT ENGINEERING

1. *High Pressure Biolers* : Benson. La Mont, Loeffler etc. their special features and auxiliaries. Inspection and testing of boilers, standard heat balance street of boilers. Indian Boiler Act.

2. *Steam Plants* : Selection of sits, general layout of building plant and its accessories. Supply, storage and handling of fuels Ash handling and dust collectors, Cooling and circulation water. Commissing and testing of plant. Modern developments in steam power plants.

3. *Disel Plant* : General layout of building and plant equipment. Fuel supply, lubrication, intake and exhaust systems. Cooling system and starting method. Reliability and life of the plant.

4. *Nuclear Plant* : Type of fuel, fuel cyeles, Co-elants, methods of cooling reactors. Moderators, methods of control. Safety in nuclear power plants.

5. *Hydro Electric Plant* : Classification and application of hydro-electric plants. Measurement of stream flow, capacity calculation for hydro power, the hydro plant and its auxiliaries Automatic and Remote control of hydro station.

6. *Power Plant Siting* : Need. Legislation. Regulatory agencies, siting scenareass. Environmental considerations. Future considerations.

7. *Non-Conventional Power Genetation System* : Introduction, Geothermal power generation. Ocean thermal energy for power generation, Solar energy for power generation, Direct energy conversion systems, Bio-gas as alternative energy source.

8. *Economics of Power Generation* : Loan division, daily load curves, incremental rate curves, sharing of load between steam and hydro plants in an inter connected system. Fixed consts working costs and factors affecting cost of power.

Comparative study of various types of plants.

Paper 7—ELECTIVE-III (MECHANICAL)

A. OPERATIONS RESEARCH METHODS IN MECHANICAL ENGINEERING :

1. Revision on Probability & sampling concepts.

2. *Linear Programming Methods and Applications* : Simplex transportation and allocation methods, Applications.

3. *Operational research Methods on inventory Control*: Probabilistic demands. Calculations when demand is known, calculation for probabilistic demands, effect of an appreciable lead time between decision to produce for inventors and actual arrival of goods.

4. *Replacement Strategies*: Capital equipment replacement with time, group replacement of items subject to total failure, Industrial staff replacement problems, replacement problems under warranty conditions.

5. *Waiting Lines*: Poisson arrivals and exponential service-times, statements of basic equations governing queue, one service station, multiple service stations, Monte-carlo methods—advantage of Monte-carlo approach.

6. *Competitive situation and solutions*: Games theory, two person Zero-sum games, approximate solution, simplified analysis for other competitive situations.

7. *Sequencing* : Introduction, Loading, sequence of machine under given product mix, the travelling salesman problem.

N.B.—The treatment of syllabus will be application oriented:

Reference :

- | | |
|---|---|
| 1. Mawg Sasion, Arther
Yespan, Laurance Friedman | Operations Research :
Methods and Problem, John
Wiley & Sons. |
| 2. Thomas L. Saaty | Mathematical Methods in
operation Research :
Mcgraw Hill Book Co. |
| 3. Harway M. Wanger | Principles of Operation
Research, Prentis Hall of
India (Pvt.) Ltd; |

Paper 7—(B) DESIGN OF MACHINE TOOLS :

Kinematic Design :

Selection of range of speeds and feeds; layout of G.P., A.P. and log progression; standardization of speeds and feeds; design of

structures and ray diagrams for machine tool gear boxes, sliding, clustered and clutched drives: preselection of speeds, reciprocating drives threads, reciprocating drives for planing, shaping and slotting machines, hydraulic drives with constant delivery and variable delivery pumps, construction of throttle valves, regulating, valves pilot valves for hydraulic drives, stepless drives.

Kinematic structures of gear cutting machine shapers (Sunderland), hobbess, bevel gear cutting machines.

2. Strength, rigidity and design analysis :
 - (i) Design of power screws of machine, load screws, ball recirculating power screw assemblies, vertical roller feed screw.
 - (ii) Design of beds and columns.
 - (iii) Lubrication and rigidity in machine tools.
 - (iv) Design of tool guides.
3. Controlling systems in a machine tool, contralised and desentralised :
4. Electrical equipment in machine tools.
5. Design of hydraulic control systems in machine tools.
6. Built-in inspection units in machine tools.
7. Vibrations in machine tools :

Shock absorbers, chatter, damping, minimisation of stick slip vibrations, vibration isolations, vibration isolated tool holders.
8. Ergonomics aspects in machine tool design. The questions may be 50% to 60% numerical and 40% to 50% theoretical descriptive.

References :

- | | |
|-----------------|---|
| Acherkan, N.S.. | "Design and Calculations for Metal Cutting Machines. Vol I, II & III (Moscow) |
| Basu, S.K. | "Design of Machine Tools" Allied Publishers. |
| Town, H.C.. | "The design and Construction of Machine Tools". |
| Pujara | "Machine Design". |

Paper 7(C)—INSTRUMENTATION & AUTOMATIC CONTROL:**Introduction :**

Measurement defined, Fundamentals of Instruments and measurement importance of measurement; requirements for static dynamic measurement; mechanical and electrical measuring systems: advantages and limitations of mechanical measuring systems for electrical systems; its advantages and limitations. Basic elements and operating characteristics of instruments.

Curve fittings by least square method. Uncertainty error analysis by Cline--Method.

Electrical Circuits & Terminating Devices :

A.C. and D.C. bridge circuits, Balance equation for bridging simple current sensitive circuits, voltage dividing and voltage balancing potentiometer circuits.

Electronic counter and its uses : Cathode Ray Oscilloscope and its uses, CRO recording techniques.

Measurement of Displacement & Strain :

Displacement measuring devices ; wire-wound potentiometer potentiometer, differential transformers; photo-cell and its uses; dial gauges, electrical strain gauges; inductive type strain gauge, resistance strain gauges, wire and foil types gauge, resistance gauge materials and their selection temperature error compensation.

Use of electrical strain gauges for the measurements of strain and displacement, strain gauge bridge amplifier, stress by means of electrical strain gauges.

Flow Measurement :

Primary methods, venturimeter, nozzle and orifice meter, velocity probes, pitot-static tube, yawmeters, steam Flowmeters, anemometers--basis principles of magnetic and ultrasonic flow meter :

Temperature Measurement :

Liquid in glass thermometers; bimetallic temperature strain elements, pressure thermometers; electrical resistance thermometer, optical pyrometers, radiation pyrometers; thermocouples, errors associated with temperature measurements.

Measurement of Force :

Measurement of axial loads using elastic transducers and electrical resistance strain gauges; use of load cells and proving rings; calibration of force measuring devices.

Measurement of torque and brakes: dynameters and electrical resistance strain gauges: measurement of speed by tachometers and stroboscopes: measurement of mechanical power using hydraulic and electric dynamometers.

Pressure Measurement :

Gravitational and elastic types of pressure measuring devices: manometers micromanometers. Bourdon pressure gauge and their defects: diaphragm type pressure pickups used in conjunction with secondary transducers, pressure cells.

Control Systems : Basic control systems.

Types of control systems. feed back. error signals, transfer functions block diagrams proportional closed-loop control system. First order position-control system, second order position control system. modified feed back and feed forward, Negative, velocity feedback. positive acceleration feedback, error-rate feedback, input-rate feed forward, integral control, stability. Routh-Rurwitz Stability criterion. Differential equations of physical systems. hydraulic electric and pneumatic elements.

Stability in the frequency domain—Nyquist criterion.

Books Recommended :

1. Mechanical Measurement By Veckwith Addison Wasly.
2. Mechanical Engg. experimentation by Tuve Mc. Graw Hill.
3. Experimental stress analysis by Deve & Adams Prentice Hall and Motion Measurement.
4. Temperature Measurement in Engg. Vol. I. by Baker Ryder & Baker, John Wiley.
5. Theory and Application of Mechanical Engg. Measurement by Moore, Van Nosttrand.
6. Experimental methods for Engineering by Holman.

FOURTH YEAR (MET.)

Materials in Industry :

The above course should broadly cover the various metallurgical aspects of different materials. Typical applications of common engineering materials.

Cast iron and alloy cast irons. Steel and alloy steels. Non-ferrous metals and alloys, light metals and alloys. Alloys used because of ease of fabrication. Corrosion and heat resistant alloys.

Alloys resistant to general wear and abrasion. Tool materials, bearing alloys used because of special physical properties.

Soft and hard magnetic materials, application in industry.

Effect of polymer structure on the properties of organic materials, thermoplastic and thermosetting resins.

Bibre re-inforced and dispersion hardened metallic & organic materials.

ELECTROMETALLURGY & CORROSION

Theoretical Aspects: Significance of Faradays laws of electrolysis, current and energy efficiencies, ionic mobility, transport number, theory of ionic conduction in aqueous solutions and fused salts. Electrode potentials, E.M.F. series application of Nornst equation. E.M.F. measurements, Nature of electrode electrolyte interance, (Helmholtz and Gouy Chapman layers). Exchange current density activation and concentration polarisation. Passivity--definition--characteristics of passivation; passivity in Iron-Chromium alloys.

Electrodeposition : Preparation of substrate for electrodeposition electrolytic cleaning, electro-etching, electropolishing and electrochemical machining.

Theory of single metal and alloy plating. Factors in fluencing nature and distribution of deposits. Plating of Cu, Ni, Cr, Zn, Sn, Ag and Au. Testing of electrodeposits. Electroforming. Electrolytic power production of Cu and Fe Electroless Plating.

Corrosion & its Prevention : Corrosion damage, economics of corrosion, electro chemical mechanism of corrosion, corrosion tendency and electrode potentials, Pourbaix diagrams, Galvanic series.

Different types of corrosion, Uniform attack, galavanic corrosion, intergranular corrosion, pitting corrosion fatigue crosion corrosion, crevice corrosion, fretting corrosion and liquid metal, corrosion.

Oxidation of Metals : Rate of laws of oxidation, tarnishing and scaling, oxide defect structure, Wagner theory of oxidation, Catastrophic oxidation.

Corrosion Testing : Various methods of corrosion testing, weight loss method, galavanostatic and potentiostatic methods of polarisation resistance measurement.

Corrosion Prevention : Cathodic and anodic protection. Various types of inhibitors--Organic and inorganic surface coatings.

MECHANICAL WORKING OF METALS

Metallurgical Factors : Introduction to mechanical working. Classification of working processes. Metallurgical factors affecting working process—structure, speed of deformation, preferred orientation.

Rolling of Metals : Forces and geometrical relationship in rolling. Variables in rolling soaking and reheating operations. Types of rolling mills and accessories. Roll pass design. Rolling of slabs, blooms, billets. rails. plastics and sheets, rods and wires, Features of an integrated rolling mill plant, rolling defects.

Forging : Classification, various stages during forging. Forging equipments and defects. Metallurgical variables associated, with forging.

Extrusion : Classification and variables in extrusion. Extrusion equipments and defects.

Metal joining techniques : Welding gas and arc welding the Brazing and Soldering.

Miscellaneous working operations : Wire drawing manufacture of tubes, wheels, tyres. sheet metal working. Explosive forming.

METALLURGY OF ALUMINIUM

Processes for preparation of alumina, preparation of electrolyte and electrodes, design and operation of reduction cells, troubles in electrolysis electrothermic processes and refining of aluminium. Recent developments. Indian ore deposits. aluminium plants in India and expansion programmes and a critical appraisal of the, problems facing the Indian aluminium industry. Foundry and Fabrication :

Moulding. melting and casting practice for Al and its alloys. Grain refinement and solidification characteristics. Defects in castings and inspection. continuous casting. Special problems in the rolling and extrusion of aluminium products. Cable making. Sintered aluminium products.

Physical Metallurgy :

Alloying nature of aluminium. Important aluminium base alloy systems (Al. Cu, Al-Zn, Al-Mg, Al-Si Al-Zn-Mg, Al-Mg-Si) classification, nomenclature of aluminium alloys. Heat treatment, properties (including corrosion resistance) and applications of commercial alloys with special reference to electrical, structural and nuclear applications.

ENGINEERING ECONOMICS AND MANAGEMENT.

What is Engineering Economics : Its nature, significance and relation with Economic Science.

Elements of Micro and Macro Economics : Principles of equilibrium, marginal analysis, pricing, market structure and competition, Economic systems—analysis of national income, accounting and factors of production.

Introduction to Money and Financial Systems : Evolution of money, banking and trade, financial sources and institutions, economics of large and small scale industries, sources of financing.

Planning in India : Economic planning concept: India's planning framework, study of plans with reference to industry agriculture labour etc.

Labour relations, causes, of industrial disputes, workers, participation in management, labour laws.

Concepts of cost, revenue, profit, budgetary control, taxation investment decision making.

Decision Making : Processes, model building, situation: Certainty, risk and uncertainty, introduction to forecasting techniques.

Operations Research Programming : Input and output analysis, benefit—cost analysis, interest tables, depreciation, introduction to techniques like net work analysis.

Management Science : Importance, development of management thought from scientific management to humanistic approach. Functional and operational areas, objectives, organization structure and type socio-psychological problem in organizations. Man power planning—psychological techniques in selection, training and development, performance appraisal, communication, Supervision, Leadership.

Introduction to production management, elements of financial management and account, marketing management market research.

APPLIED METALLURGICAL THERMODYNAMICS

Laws of thermodynamics. Solutions--Gibbs Duhem equation and its importance. Ideal, regular and dilute solutions.

Absorption gases in liquid metals Clausions--Clapayron equation and its applications Absolute reaction rate theory. Nucleation and growth transformation.

Application of physical chemistry to Blast furnace reactions and the partitioning of solute elements between iron and the slag in the blast furnace.

Physical Chemistry of carbon. Sulphur. Manganese phosphorous and silicon removal in steel making.

Application of physical chemistry in the production of aluminium copper, zinc, magnesium and lead.

Quasi-chemical approach to ideal and regular solutions.

Statistical concept of entropy. Maxwell Boltzmann Statistics and its applications.

Elective :

MINI STEEL PLANT TECHNOLOGY

Introduction : Basic concepts of mini steel plants, present status of mini steel plants in India. Future Plants. Scope of Mini steel plants: General manufacturing schedule, special alloy plants and their products.

Manufacturing Technology: Melting and teeming practice, provision for continuous casting machines and vacuum degassing units, raw materials and power requirements. Provision for rolling and forging unit to manufacture and products.

Inspection and quality control of finished products. Typical layout of a mini steel plant and special alloy steel plant.

Economics of Mini steel plant : Elements of production cost control, economics as related to product mix and production technology.

APPLIED X-RAYS & PHYSICS OF METALS

Nature, production and detection of X-rays. Continuous and characteristic spectrum. Absorption of X-rays, filters. Diffraction. The Bragg's law. Diffraction methods viz. Powder Laue, and rotating crystal methods.

Intensity of diffracted beam : Scattering by electron, atom and unit cell. Various factors affecting intensity of diffracted beams.

Concepts of reciprocal lattice and Stereographic projection.

Applications : Determination of crystal structure, precise lattice parameter determination. Phase diagram determination, detection of order-disorder transformation chemical analysis by X-ray diffraction. Measurement of residual stresses.

Electron theories of metals : Classical quantum and Zone, theories. K space and Brillouin zones, density of states, energy bands and energy levels.

Application of Electron theory : Electrical conductivity metals, semi-conductors and insulators. Dia, para ferro and antiferro-magnetism. Theory of cohesion, thermal behaviour of solids specific heat, thermal expansion and thermal conductivity.

Principles of alloy formation Primary and intermediate phases and their formation. Hume Rothery rules, normal valency and interstitial compounds.

Mass Transfer : One dimensional steady and unsteady state diffusion, Matano method, convective mass transfer, individual and overall mass transfer coefficient, simultaneous momentum, heat and mass transfer, chilton-colburn analogy, simple concepts of boundary layers theory.

Order-disorder transformation : Theoretical basis, the L.R.O. and S.R.O. and clustering and antiphase domains.

Elective :

TECHNOLOGY OF ALLOY STEEL AND CAST IRON

Structural Background : Limitations of plain carbon steels, Alloying nature of iron, effects of alloying Elements on Fe-C diagram tempering sequence, strengthening mechanisms.

Thermomechanical treatments: Discussion on important, treatments such as controlled rolling, ausforming is forming, hot and cold working. Thermal cycling, strain temporing Manufacture of Alloys steels. Alloy steel industry in India. Manufacture of alloy steels in electric furnaces, induction furnaces and by oxygen steel making processes.

Low Alloy Steels : High tensile, structural steel, case-carburizing steels, nitriding steels, ball bearing steels, spring steels, bainitic steels, low alloy high strength steels used in quenched and tempered conditions, ausformed steels.

High Alloy Steels : High nickel steel for cryogenic application tool and die steels, stainless steels, Heat resisting steels, Hadfield steel maraging steels.

Alloy Cast Irons : Inoculated, spheroidal graphite, malleable Ni-hard, Ni-resist, and high silican Irons.

(Electrical Engineering—Electronics Option)

Paper 1 : Power Electronics— Syllabus is the same as in Fourth Year Elect. Engineering.

Paper 2 : RADAR AND TELEVISION ENGINEERING

I. Radar Engineering :

- (a) Radar Range Determination : Radar Direction indication; Data presentation; Signals and noise consideration; Radar range equation; Radar cross-section of target; Limitations of radar.
- (b) Radar Receivers : Introduction: General principles; receiver noise and its consideration: R.F. amplifiers. crystal mixers, I.F. amplifiers; Radar displays.
- (c) Radar Transmitters : Introduction to microwave oscillators and amplifiers for radar: Modulators: Tracking with radar: Radar Antennas (brief survey): Propagation characteristics of microwaves at radar frequencies; weather and interference.

II. Television Engineering :

- (a) Elements of Television systems : Scanning sequence; Interlacing. Blanking pulses; synchronisation standards.
- (b) Television cameras : Image orthicon: vidicon tubes; frequency bands and resolution.
- (e) Television Transmitters : Video system and composite video signal: vestigial side band and transmission: Antennas.
- (d) Television Receivers : Separation and Reproduction of sound video amplification; d.c. restoration; sweep circuits and their synchronisation.
- (e) Colour Television : Elements of colour Television.
- (f) T.V. Antennas: T.V. applications.

Paper 3 : MICROWAVE ENGINEERING

1. Wave Guide :

Introduction. Wave Equation and its solution for a rectangular waveguide. Propagation Characteristics in T.E., T.M., and T.E.M. modes in rectangular wave guides Circular wave guides. Parallel wire and coaxial lines. single conducting wire waveguides. choice of waveguides. Equivalent circuit of wave guides.

2. Wave Guide and Coaxial Line Components:

Coupling probes, stubs and slug turners, wave guide impedance matching, Inductive, Capacitive and resonant windows, tuning screws, waveguide phase shifters, wave guide corners bands and twist, wave guide attenuators and mode suppressors wave guide joints, travelling detector directional couples, wavemeters, Microwave Filters, Terminations, Frequency converters.

3. Microwave Measurement :

Introduction, Calorimeter Wattmeter, Power measurement by Bolometers, thermistors, thermocouples and crystals, Measurement of standing waves, Impedance determination, Measurement of frequency and wave length, Microwave Bridges, Q. Measurement, cord tests, Noise factor measurements.

4. Antennas :

Introduction, Directional Characteristics of antennas; Directive antenna arrays; Arrays with parasitic elements; reflectors; Broadband Antennas, Horns, Lenses.

5. Microwave Resonators :

Introduction: Butterfly resonators, parallel wire and Coaxial line resonators and their resonant frequencies, wave guide resonators, cavity resonators, tuning plungers.

Paper IV : RADIO RECEIVERS & TRANSMITTERS

1. *Radio Receivers* : (a) Classification of radio receivers and their salient features, (b) Amplitude Modulated Receivers, super-hetrodyne Receivers, Frequency mixers for radio receivers, Tracking and Alignment of circuit for single dial tuning, I.F. Amplifier, Automatic gain control, Tone control, Band spreading Tuning Indicator Communication Receivers; single sideband Receivers, Diversity reception, (c) Frequency Modulated Receivers and Detectors; Stage of F.M. Radio Receivers, various types of Limiters, Classification of F.M. Detectors, various types of discrimination. Capture Effect in Frequency Modulation.

2. *Radio Transmitters* : (a) Amplitude Modulation Methods for transmitters, (b) Classification of radio transmitters in various ways, (c) Stages of Amplitude modulated radio transmitter, Carrier frequency requirement of a radio transmitter, Master Oscillator, Harmonic generator, radio broadcast transmitter, radio telephone transmitter, privacy devices in radio telephony, single side band transmitters, radio telegraph transmitters, (d) Frequency Modulated Transmitters: Classification, Reactance Tube modulation. Reactance Tube F.M. Transmitter Frequency stabilisation. Armstrong

frequency Modulation: Arm strong F.M. Transmitter. Phasitron F.M. Transmitter. (e) Transmitter Power Supplies & tube cooling.

3. Basic concepts about satellite communication.

Paper V : TRANSMISSION. ANTENNAS AND WAVE PROPAGATION.

1. Transmission Lines :

Losses in High Frequency lines, Transmission line differential equations. Distribution of voltage current in loss free lines, loss free line terminated with impedance Z_R . transmission line. as an impedance transforming device, resonant and antiresonant line. High Frequency line, Standing wave ratio. Impedance Matching in transmission lines, Smith Chart and its uses. Forms of H.F. transmission lines.

2. Antennas :

Introduction. Radiation from a current element in free space, Power Radiated from simple Antennas Aerials, effect of earth, Power gain of an antenna. Low frequency aerials, Antenna Arrays. Rhombic Aerial, Ultra high frequency aerials, Receiving aerials.

3. Propagation of Radio Waves:

Introduction ionosphere and its effect, critical and maximum usable frequency, effect of earths magnetic field: Reflection and refraction of waves in ionized layers; Factors affecting the radiation of Long. medium, short and ultra short waves; Scatter propagation.

Paper 6 : COMPUTER ENGINEERING

Syllabus is same as in Fourth Year Electrical Engineering.

Paper 7 : Elective III (Electronics Option) c :

ACOUSTICAL ENGINEERING

1. *Vibrations and Waves* : Free, Damped, and forced Oscillations. Energy of vibrations. Mechanical Resonance. Electro-mechanical and acoustical circuits. -

2. *Plane and Spherical Waves* : General wave equation, Plane waves and spherical waves.

3. *Loud Speakers* : Direct radiator loud speaker, equivalent circuit, efficiency, effect of cabinets, design consideration. Horn speakers, Column loud speakers.

4. *Microphones* : Carbon, condenser, crystal, moving coil dynamic and velocity ribbon microphones. Frequency response characteristics, directivity patterns and ratings of different microphones.

5. *Acoustic of Studies & Auditorium* : Sabines reverberation theory; Eyrings equation, measurement of reverberation time. Standing waves in a room, characteristic frequencies. Absorbing materials. Design consideration of auditorium and broadcasting studios.

6. *Recording and Reproduction of Sound* : Principles of disc magnetic and crystal recordings. Distortion in reproductions. Principles of recording sound in films.

Paper: Elective III (Electronics Option) b:

MICROPROCESSORS

1. *Introduction* : Digital Logic, Number Systems & Codes.

2. *Microcomputer Architecture* : Memories (ROM, R/W Memory), Microprocessors.

3. *Soft Wave* : Introduction, Planning a Program, Flow Charts, Machine Language, Symbolic Language, Fundamentals of Programming in Assembly Language, Editors, High Level Language.

4. *Interfacing and Peripheral Devices*: Programmed Data Transfers, D.M.A. Transfer, Synchronization, I.C. Interface Elements, Programmable Interfaces, Peripherals.

5. *Microprocessors and Microcomputer Systems*: Microprocessor Selection, Description of Common Microprocessors like Intel 4004, Intel 4040, Intel 8008, Intel 8080, Motorola 6800 etc.

6. *Design Methodology & Applications*: Design Methodology; Examples of Microcomputer Applications.

Paper 7 : Elective III (Electronics Option) c :

NUCLEAR POWER ENGINEERING

1. *Fundamental Theory of Nuclear Power Engineering*: Elements of Atomic Physics; Mass Energy Equivalence and Binding Energy; Radio Activity; Nuclear Fission.

2. *Reactors*: Classification of Nuclear Reactors, Description of major types of Reactors.

3. *Fast and Breeder Reactors:* Experimental Breeder Reactors, Dounreay Fast Breeder Reactor, Fermi Fast Breeder Reactor, General Characteristics of Fast Breeder Reactor, Future Development of Fast Reactors.

4. *Materials and Equipment for Reactors:* Fuel Materials: Moderators: Coolant: Reactor Control: Steel Aluminium and Special Metals: Heat Exchanger. Health Monitoring Instruments: Electromagnetic Pumps and Radiation Detectors.

5. *Nuclear Fuel Production & Economic Aspects of Nuclear Power:* Primary Nuclear Fuel Production: Plutonium Uranium Cycle; Handling of Fissionable fuels and disposal of Radio Active waste; Health Physics: Byproducts of Reactor; Thermo Nuclear Power.

6. *Reactor Theory:* Slowing Down of Neutrons; Theory of Diffusion; Power Equation for a Cubic Core Reactor, Reflected Reactors.

7. *Accelerators:* Introduction, Direct Voltage Accelerators, Van Do Graff Electrostatic Generator, Cockroft--Walton Accelerator, Linear Accelerator, Cyclotron, Synchro-cyclotron, Betatron, Proton Synchrotron.

APPENDIX-IV

(Ref: Res. No. 5 of minutes)

Copy of letter No. F. 15-8/82-T-2 dated 5th October, 1982, received from the member-secretary, All India Board of Post-Graduate and Research in Engg. & Technology, Govt. of India, Ministry of Education & Culture, Department of Education, New Delhi'

Sub: Change in the duration of the M. Tech. Programme and selection of students through G.A.T.E.

Sir,

I am directed to state that at present the duration of the post-graduate degree course as is being conducted in the various Engineering and Technological institutions is of two years' duration. The Nayudamma Committee in its report on Post-graduate Education and Research in Engineering and Technology has suggested that the duration of the course should be of three semesters. The above recommendation of the Nayudamma Committee has been accepted by the Government and it is likely to be introduced in the various I.I.T.s with effect from July, 1983. It is suggested that the other institutions conducting post-graduate courses should also start thinking in this direction by revising their courses accordingly so that they are also in a position to switch over to a three semesters course with effect from July, 1983. For this purpose it would be necessary for you to get your scheme of Post-graduate courses revised and approved by the University, to which your college is affiliated for these course. You are, therefore, advised to take immediate necessary action in this direction so that the change-over in the duration of the course can take effect from July, 1983. Please note that once this change over is effected from July, 1983, the stipend payable to a student of the post-graduate course will be for a maximum period of 18 months for the students admitted from July, 1983.

Another important recommendation made by the Nayudamma Committee and accepted by the Government is regarding the admission of Post-graduate students through the G.A.T.E. IITs and IISc are proposing to admit all students for Post-graduate course only through the G.A.T.E. and IIT, Madras is organising, G.A.T.E., Examination to be held in March, 1983, the results of which will be open to Post-graduate Institutions in the country.

I would suggest that your institution may also send your consent to utilise G.A.T.E. results for admitting students in your institutions.

I will appreciate if you could specifically reply whether your institution will be participating in the reorganized Post-graduate courses of three semesters and admission through the G.A.T.E. from July, 1983. A reply will be appreciated.

Sd/-
I.B. SANGAL
Member-Secretary.

APPENDIX-V

(Ref: Resolution No. 5 of the minutes)

ORDINANCES RELATING TO M.E. EXAMINATIONS
(Regular Course)

O.319—Q :

(I) This ordinance shall be called M.E. in Civil, Electrical, Mechanical, Metallurgical, Structural and Environmental Engineering Branches ordinance (Regular Course).

(II) The following abbreviations are used for the various branches of Engineering :

C for Civil
M for Mechanical
E for Electrical
Met. for Metallurgical
S for Structural
Env. for Environmental.

(III) It shall apply to the following examinations :—

1. M.E. (C, E, M, Met., S, Env.) 1st Semester Exam.,
2. M.E. (C, E, M, Met., S, Env.) 2nd Semester Exam.,
3. M.E. (C, E, M, Met., S, Env.) 3rd Semester Exam.,

(IV) The provisions specified on any subject or matter in this ordinance shall supersede/over-ride the corresponding provisions, if any, on that subject or matter contained in the Ordinances/Rules/Regulations which were in force heretofore for these examinations. In other matters, where the present ordinance is silent the earlier ordinances/Rules/Regulations which were in force before the introduction of this ordinance will continue to operate.

(V) Admission to M.E. Course will normally be made twice in a year, once in July when the first semester commences and then in January when the second semester commences. The students who are admitted in January will appear first in Second semester examination April/May and subsequently in first semester examination in November/December same year. After this, they will join the third semester.

First/Third Semester examinations will normally be held in November/December and Second Semester examination will normally be held in April/May every year provided that :—

- (i) For failed candidates, the I & III semester examinations shall also be held in April/May.

(ii) For failed candidates, the II Semester examination shall also be held in November/December.

(iii) The examination on the dissertation will be held only after the due submission and evaluation of the dissertation.

(VI) The examination shall be conducted by means of written, papers, practicals and/or viva-voce examinations including sessional work done in the laboratories, drawing office, workshop, factories and Engineering Works.

(VII) The regular course of study for M.E. degree in Civil Mechanical, Electrical, Metallurgical, Structural and Environmental Engg. shall extend over a period of not less than 3 semesters. The course will have to be completed by a candidate in no more than 6 semesters counted from the date of admission. In case a candidate fails to complete the course even in 6 semester, he shall have to appear again from the beginning i.e. from first semester examination. On satisfactory completion of the course and after passing the final examination and approval of the Thesis or Dissertation, a candidate will be awarded the M.E. degree in the respective branch.

(VIII) No candidate will be admitted to the course of study for the degree of M.E. in any of the above branches unless he produces a satisfactory evidence to the effect that he has obtained atleast second class B.E. degree in the branch concerned from this University or he has secured degree or diploma from any other University or Institute recognised by the University as equivalent thereto :

Provided that :

A candidate who has obtain B.E. degree as aforesaid in Mechanical/Chemical Engineering may also be admitted to the course of study for the degree of M.E. (Met.) and he shall be required to produce a certificate of proficiency from the Principal of the college in which he is admitted in the following additional papers before he is allowed to go in the III Semester Class of M.E. (Met.)

1. Extractive Metallurgy
2. Physical Metallurgy.

Provided further that a candidate, who has obtained M.Sc. (Physics)/M.Sc. (Chemistry) degree securing atleast 60% marks and who has offered Physics, Chemistry and Mathematics at the degree level from this University or any other University or Institute recognised by the University as equivalent thereto may also be admitted to the course of study for the Master's degree in Metallurgy and shall be required to

produce a certificate or proficiency in the following papers/practicals and sessionals from Principal of the college in which he is admitted before he is allowed to go in III semester of the course.

Practicals and Sessionals :

1. Engineering drawing
2. Manufacturing processes.

Theory papers :

1. Extractive Metallurgy.
2. Physical Metallurgy.

For each theory paper for which the candidate is required to produce a certificate of proficiency, he will be required to attend two hours per week of instruction.

For the practicals and sessionals for which the candidate is required to produce a certificate of proficiency, he will be required to attend two hours per week of instructions.

A candidate who has obtained B.E. degree in Electronics or Telecommunication Engineering may also be admitted to the course of study for the degree of M.E. (Elec. Engg.) under the condition that he shall be required to produce a certificate of proficiency from the Principal of the college in which he is admitted in the following additional subjects before he is allowed to go to the III semester class.

- (i) Electrical Machines.
- (ii) Electrical Power System.

For each theory paper for which the candidate is required to produce a certificate of proficiency, he will be required to attend two hours per week of instruction.

Provided further that a candidate who has obtained M.Sc., (Chemistry) M.Sc. (Geology) degree securing atleast 60% marks from this University or any other University or institute recognised by the University as equivalent thereto may also be admitted to the course of study for the masters degree in Environmental Engineering. The candidate will be required to show proficiency in the following papers before he is admitted to the course :

- (i) Basic Environmental Engineering/Public Health Engineering.
- (ii) Basic Engineering.

Provided further that a candidate who has obtained B.E., degree as aforesaid in Mechanical/Metallurgical/Chemical/Electrical Engineering also be admitted to the course of study for the degree of M.E. Environmental engineering. The candidate will be required to show proficiency in the basic environmental engineering/Public health Engineering. A candidate who has obtained B.E. degree in Civil Engineering may be admitted for the degree of M.E. Environmental Engineering.

Candidates having A.M.I.E. qualification may also be admitted to the M.E. in C.E.M. Met., S, Env. provided they have obtained atleast 55% in the A.M.I.E. sections A & B examination after obtaining a Diploma in relevant branch in I division from Board of the Technical Education, Rajasthan or any equivalent qualification.

(IX) Candidates who pass will be allowed to move to the next semester.

Candidates who fail at the previous semester examinations will also be allowed to move to the next semester, subject to condition that the total back log should not exceed 4 theory papers and 4 units of course work and one seminar.

Before submission of the dissertation, the candidate should have appeared in all the proceeding examinations upto the end of the 2nd semester examination.

(X) Candidates shall show competent knowledge of the subject prescribed for the relevant semesters as given in the teaching and examination scheme.

(XI) A candidate having a backlog exceeding the prescribed quantum given in X above has two option (a) either become an ex-student and appear at a subsequent semester examination or (b) join the relevant semester as a regular student.

(XII) The marks obtained by a student at 2nd or subsequent attempts shall be credited in full.

(XIII) The examination in each practical sessional course work and seminar shall be conducted by a Board of Internal examiners comprising the Principal as Chairman. Head of the department concerned as Ex-Officio members and ordinarily two teachers of the teaching departments concerned as members. One of the two examiners may be external if found necessary. This examination will consist of two components, namely :—

(i) Sessional work done during the entire term and,

- (ii) Practical examination at the end of term. The sessional work done during the term will carry 60% of the marks allotted to the concerned subject. The Head of the teaching department concerned shall first obtain the assessment for the work done during the term from the teacher and will finalise the sessional component of marks after consultation with the teachers concerned which will be made available to the practical examiners at the time of the examination.

The practical examination component carrying 40% of the marks shall be valued by the practical examiners by means of at least two of the following methods :

- (i) Performing an experience or practical work
- (ii) Written quiz and,
- (iii) Viva-voce examination.

The practical examiners shall add the practical examination component of marks to the sessional component already made available to them and prepare a consolidated statement of sessional marks, practical marks and total marks and shall submit these marks to the University through the Principal.

The passing or failing of the student in the practical and/or sessional examination shall be decided on the basis of the total marks and not on the individual components.

(XIV) In each semester examinations normally not more than half the papers shall be set by External Examiners.

- (XV) (a) The subject of the thesis or dissertation shall be intimated to the University at least three months before the date of submission.
- (q) The candidate shall pursue alongwith the regular course of study, his investigations at the college under the supervision of a member of staff or alternately an Expert, approved by the Principal.
- (c) The thesis or dissertation shall have to be submitted in partial fulfilment of award of the Degree for which the candidate shall have to work for one semester. The candidate shall submit three printed or type written copies of his thesis or dissertation to the Registrar through the Principal for transmission to the examiners.
- (d) The thesis or dissertation shall be referred to two examiners, one external and the other internal, who shall be a person who has guided the candidates work. They shall examine the thesis or dissertation and shall also conduct the viva-voce test.

- XVI. (a) The result of a candidate will be worked out at the end of each semester.
- (b) For passing, a candidate must obtain :
- (i) 33 % marks in each of the written papers.
 - (ii) 50 % marks in each of the practicals, sessionals, course work and seminar.
- (c) There shall be no division awarded during first two semester examinations. The division will be awarded on the aggregate of the marks obtained in all the examinations from first to third semester.
- (d) The award of division will be as follows :
- Honours : 70 % of the aggregate or above
 - I division : 60 % of the aggregate or above
 - II division : All other candidate who pass.

APPENDIX-VI

(Ref. Resolution No. 5 of the Minutes)

M.E. Course in Non-ferrous Metallurgy

First Semester :

	Hrs./week	Exam Hrs.	Marks
A. Writtern Papers :			
1. Mathematics	4	3	100
2. Research Techniques in Met.	4	3	100
3. Advanced Material Sc.	4	3	100
4. Advanced Aluminium Technology.	4	3	100
	<u>16</u>	<u></u>	<u>400</u>
B. Practicals & Sessionals :			
5. Mathematics	3		50
6. Research Techniques in Met.	3		50
7. Advanced Material Sc.	3		50
8. Advanced Aluminium Technology.	3		50
9. Seminar	—		50
Grand Total :	<u>28</u>	<u></u>	<u>650</u>

Second Semester :

	Hrs./week	Exam. Hrs.	Marks
A. Written Papers :			
1. Advanced Non-Ferrous Matallurgy.	4	3	100
2. Elective-I	4	3	100
3. Elective-II	4	3	100
4. Elective-III	4	3	100
	<u>16</u>	<u></u>	<u>400</u>

List of Electives :

- (i) Physical Met. of Non-ferrous Metals & Alloys.
- (ii) Advanced Met. Thermodynamics.
- (iii) Advanced Met. Kinetics.
- (iv) Physical Met. of light metals and alloys.
- (v) Advanced Mineral Dressing.
- (vi) Operational Research and Computer Programming.
- (vii) Production Mangement and control.
- (viii) Non-ferrous Foundry practice.
- (ix) Industrial Metallurgy.
- (x) Industrial Budgeting and cost Management.

B. Practicals & Sessionals :

5. Advanced Non-Ferrous Met.	3	—	50
6. Elective-I	3	—	50
7. Elective-II	3	—	50
8. Elective-III	3	—	50
9. Seminar	—	—	50
Grand Total :	28		650

Third Semester :

	Hrs./week	Exam. Hrs.	Marks
1. Seminar	—	—	100
2. Dissertation	—	—	400
Total :			500

Note : Total contact hours with the students shall not be less than 28 hours for Seminar and dissertation together.

The elective papers to be offered in the third semester will be announced at the beginning of the Semester.

SECOND SEMESTER EXAMINATION

6. Environmental Engg. II	3	1	4	3	100	50	150
7. Air and Noise Pollution	3	1	4	3	100	50	150
8. Applied Micro-biology and Environmental Health	3	1	4	3	100	50	150
9. Elective : Two of the following :							
(i) Environmental Quality Management	3	1	4	3	100	50	150
(ii) Industrial Waste Treatment.							
(iii) Urban Planning	3	1	4	3	100	50	150
(iv) Groundwater Pollution							

Total (2nd Semester) :

15	5	20	500	250	750
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THIRD SEMESTER EXAMINATION

10. Thesis/Dissertation	—	12	12	—	—	300	300
11. Project and Seminar	—	6	6	—	—	250	250
Total 3rd Semester) :	—	18	18	—	—	550	550
Grand Total :	31	28	59	—	1000	1000	2000

Teaching and Examination Scheme for M.E. (Civil) Water Resources Engineering Courses (Regular)

FIRST SEMESTER EXAMINATION

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Applied Mathematics			4	1	5	3	100	—	100
2. Fluid Mechanics			3	1	4	3	100	50	150
3. Economic Principles of Water Resources Planning and Systems Engineering.			4	1	5	3	100	50	150
4. Surface water hydrology			3	1	4	3	100	50	150
5. Principles of Structural Design			2	1	3	3	100	50	150
Total (1st Semester) :			16	5	21		500	200	700

SECOND SEMESTER EXAMINATION

	4	2	6	4	100	50	150
6. (a) Land and Water Management OR (b) Chemistry and Microbiology for Public Health Engineers.							
7. (a) Free Surface Flow OR (b) Environmental Engg. I	4	2	6	4	100	50	150

8. (a) Irrigation Structural Design	4	2	6	4	100	50	150
OR							
(b) Environmental Engg. II							
9. Ground Water Hydrology	3	1	4	3	100	50	150
10. Any One of the following Electives :							
(i) Advanced Fluid Mechanics							
(ii) Advanced Hydraulics							
(iii) Advanced Design of Irrigation Structures.							
(iv) Advanced Public Health Engg. Design.	4	2	6	4	100	50	150
(v) Water Resources Systems							
	19	9	28		500	250	750

THIRD SEMESTER EXAMINATION

11. Thesis/Dissertation	—	12	12	—	—	300	300
12. Project and Seminar	—	6	6	—	—	250	250
	—	18	18	—	—	550	550
Grand Total :	35	32	67		1000	1000	2000

APPENDIX-VII

(Ref : Res. No. 5 of the Minutes)

SYLLABUS OF M.E. (ENVIRONMENTAL ENGINEERING)

M.E. (Civil) Water Resources Engineering }
 OR M.E. Environmental Engineering : } *Common Paper*

Applied Mathematics :

- (1) Vector Calculus: Vector and Scalar point functions. Gradient, Curl and divergence. Divergence and Stokes theorems and their applications.
- (2) Curves, surfaces and volumes: Curvilinear coordinates, Area and volume of a Curved surface, Maxima and Minima.
- (3) Complex variables: Cauchy-Riemann equations. Analytic and Harmonic function's. Taylor's and Laurents series. Cauchy and Residue theorems alongwith their application conformal mapping by elementary functions.
- (4) Matrices: Multiplication of matrices, Transpose, conjugate, adjoint and inverse of a matrix, solution of Linear algebraic equations. Cramers rule. Eigenvalue problem and its engineering applications.
- (5) Differential Equations: Solution of ordinary (first order and second order) different equation. Bessel function, Fourier Series. Partial Differential equations, Transform solutions, Greens functions. Convolution theorem. Wave equation, Laplace equation. Dirichlet problem.
- (6) Numerical Analysis : Methods for obtaining numerical solutions to problems arising in engineering. Algebraic equations. Interpolation. Numerical integration of ordinary linear differential equations. Finite difference methods for solution of linear partial differential equations.
- (7) Probabilities and sets. Discrete sample spaces. Combinatorial theory. Postulates of probability. Conditional probability. Probability Distributions. Binomial and Poisson distributions, Multivariate Probability distribution. Probability densities and distribution functions, Uniform, exponential, gamma, normal and chisquare distributions, Multivariate probability densities. Methe-matical expectations and moments of discrete and continuous variables. Linear combinations of random variables. Central limit theorem.

M.E. ENVIRONMENTAL ENGINEERING

Chemistry for Environmental Engineers :

- (1) Elements of water chemistry: Solution and suspension of impurities, solutions and solubility. Solutions of ionised solutes chemical equilibria in solution. Acid-base equilibria. Oxidation-Reduction Processes. Electrode potentials. Rates of chemical reactions. Absorption isotherms. Electrokinetic properties of colloids. Stability and coagulation of colloids.
- (2) Basic concepts of Bio-Chemistry : Enzymes, Buffers, Biochemistry of Carbohydrates, proteins, fats & oils.
- (3) Basic concepts of colloid chemistry : General properties of colloids, colloidal dispersions in liquids, colloidal dispersions in air.
- (4) Basic concepts of Radio-Chemistry: Atomic structure. Natural Radioactivity. Atomic transmutations and artificial radioactivity. Nuclear Fission, Nuclear fusion, Use radio-active materials as tracers.
- (5) Analysis of water and waste water: Physical, Chemical and bacteriological tests commonly used for the analysis of water and waste water.

Systems Engineering and Solid Waste Management :

(a) Systems Engineering :

- (1) Use of computers: analog and digital computers. Basic Principles of Fortran programming.
- (2) Basic concepts of a system and systems engineering. Problem formulation. Limitations of systems engineering. Optimization methods.
- (3) Linear Programming: Fundamental properties. Graphical and Simplex methods. Simplex tableau, Duality theory. Parametric linear programming linear programming. The Transportation.
- (4) Network Analysis : C.P.M. and PERT.
- (5) Dynamic Programming: Characteristics and formulation and solution of simple problems.
- (6) Stimulation: Basic principles, generation of random numbers.

- (7) Decision Theory: Decision under certainty, under risk and under uncertainty.

(b) Solid Waste Management :

Solid wastes. solid waste management systems., Engineering principles of storage, collection, transportation and processing of solid wastes. Recovery of resources. Hazardous wastes. Management Issues, Planning in solid waste management. collection alternatives, transportation. Mathematical optimization model for solid wastes management. Policies for solid waste.. management.

Fluid Mechanics and Hydrology:

Mathematical foundations of Fluid Mechanics. Historical development.

Ideal fluid theory, Foundations of flow analysis. Basic laws for systems and control volumes. Continuity equation. Eulers equations. Bernoulli equation. Linear momentum equation. Application. Vector notation.

Incompressible irrotational flow. Circulation vorticity, velocity potential, stream function and flow-nets.

Real fluids. Viscosity and its significance. Stokes viscosity law. Flow in circular pipe. Creeping motion. Parallel flow past a sphere. Stokes' law for terminal settling velocity and Oseen correction.

Elementary concept of boundary layer theory. Separation Vertex trail.

Introduction to turbulent flow. Eddy viscosity, Reynolds's stresses and significance.

Pressure distribution around immersed bodies. Calculation of Drag and lift. Form drag, skin friction drag, total.

Dimensionless Numbers. Eulers Reynolds. and Froudes numbers and their significance,

Meteorology : Atmosphere as a vehicle for transfer of Water humidity, precipitation, evaporation. Weather forecasting. Determination of the total rainfall on an area: of area, intensity, duration of maximum rainfall. Probable maximum precipitation.

Measurement of Surface Flow : Methods of measurement and instruments : Velocity and area, chemical dilution, gauging structure. The stage discharge relation.

Elementary concept of losses and max. flood.

Occurrence of ground water. Porous materials. Darcy's law. Permeability and porosity. Anisotropy. Hydraulics of ground water. Differential equations of flow.

Potential Flow : Flownets, boundary conditions. Steady State flow. Confined aquifer. Unconfined aquifer. Mechanics of well flow and pumping tests: Steady and unsteady flow in confined and unconfined aquifers. Boundary effects and methods of images. Leaky aquifers. Partial penetration of wells. Interference of well. Yield of wells.

Ground water development : Tubewells. Artificial recharge. Conservation. Groundwater prospecting. Groundwater level fluctuations. Salinity of ground water. Ground water pollution. Infiltration galleries.

Environmental Engineering-I :

- (1) Unit Operations : fluid Transport in open conduits. Mixing. Sedimentation. Flow through beds of solids. Vacuum filtration. Gas transfer. Adsorption.
- (2) Unit Processes: Water stabilization. Coagulation. Disinfection. Ion exchange. Electrodialysis. Defluoridation and desalination of water. Taste and odour control. Biological oxidation principles.
- (3) Kinetics of Plugflow and completely mixed reactors. Batch processes. Activated sludge processes and its modification. Oxidation ditches and aerated lagoons. Trickling filters. Waste stabilization ponds.
- (4) Aerobic and Anaerobic digestion of sludge. Handling and disposal of digested and undigested sludge.
- (4) Disposal of sewage by dilution self-purification of streams. Disposal of sewage on land, Sewage farming.

Environmental Engineering II :

- (1) Principles of water quality management.
- (2) Water Treatment Plant Design: General design consideration. Types of plants. Detailed design of various units such as : Aeration, Rapid Mixing and Flocculation. Sedimentation. Filtration. Chlorination and disinfection.

- (3) Design of water distribution system. Hardy cross methods.
- (4) Design and construction of Sanitary and Storm Sewers: Surveys and investigations, quantity of Sanitary Sewage. Quantity of storm water. Design of Sewer Systems. Manholes. Sanitary Sewage Diversion and Storm water overflow devices. Siphons. Materials for sewer construction. Construction methods.
- (5) Design of waste water and stormwater pumping stations
- (6) Sewage Treatment Plant Design : Detailed design of various units of sewage treatment plants.
- (7) Principles of industrial waste treatment. Collection and disposal of solid wastes.

M.E. ENVIRONMENTAL ENGINEERING

Air and Noise Pollution :

(a) *Air Pollution :*

Meteorological and topographical effects on air movements, fuels and atmospheric pollutants : sources and diffusion of SO₂, CO, NO_x, smoke, particulates and heavy metals in air. Sampling techniques and analysis of different gases and solid particulates, effects of air pollution on human health, control techniques, air quality criteria and case study.

(b) *Noise Pollution :*

Introduction to the assessment and measurement of sound. Environmental effects and assessment of noise. Basic principles of noise control. Noise control by acoustical treatment. Industrial and construction noise. Aircraft and airport noise. Highway and Rail traffic noise. Control of noise. Effective noise management.

Applied Micro-biology and Environmental Health :

(a) *Applied Microbiology :*

- (i) Fundamentals of Sanitary Micro-biology; Bacteria (forms, cell structure, chemical composition. Metabolism) Algae (Identification, classification, culture media metabolism), Protozoa, Rotifers. Ciliates. Worms and larvae. Energy concepts in biodegradation. Synthesis, growth and death of micro-organisms. Population dynamics.

- (ii) Applied Microbiology : Pathogenic micro-organisms in water, milk and food. Parasitism, parasitic bio-chemistry. toxin production. pathogen survival, control of pathogens. Stream pollution. Micro-organisms of tricking filter, activated sludge. oxidation ponds. anaerobic digestion and refuse disposal. Air microbiology.

(b) *Environmental Health :*

Introduction to Public Health and environmental health. Environmental health programmes and organization. Epidemiology and control of communicable diseases. Toxicology. Environmental health planning. Radiological health.

Environmental Quality Management :

Aim and objectives of different monitoring programmes. global environmental monitoring system (GEMS). national monitoring programmes: water monitoring programmes. objectives and various systems. soil monitoring and survey, management of soil erosion, acidity and alkalinity etc. Basic principles of environmental management. manpower and training programmes, legal aspects and economic aspects: national environmental policies, regional and international issues and their implications. Implementation of the policies and organization of management agencies: national, state and local levels. Mathematical models or environmental quality management.

Environmental impact assessments and statements. Elements of environmental impact analysis. Impact assessment methodologies.

Industrial Waste Treatment :

1. Industrial Wastewater treatment technology.
2. Industrial Wastewater treatment equipment.
3. Water Pollution control in the following industries :
 - (i) Textiles and synthetic fibres.
 - (ii) Metallurgical
 - (iii) Petroleum
 - (iv) Chemical and mineral
 - (v) Paper and pulp
 - (vi) Milk and dairy.
4. Advanced methods of waste treatment for various industries.

Urban Planning :

1. Environmental Effects of Urbanization: Energetics of the biosphere, Human Processes in the biosphere, Natural climatic changes. The climate of cities, Hydrologic effects of Urban land use.
2. (a) The Transportation system and its Environment : Transport costs, transportation demand, transportation network flows and environmental impacts. Transportation goals and objectives.
(b) Engineering design, planning and management of applications in Transportation: Decision Making in Transportation Management and Planning, Long-range transportation planning, Location and design, system operation and management.
3. Planning of buildings and other facilities in the urban area from the considerations of managing the air resources, water-resource management, solid waste management and noise pollution.
4. Slum clearance and improvements, problems. Some case studies.

Groundwater Pollution :

1. Water Quality : Quality of groundwater resources. Dissolved constituents, suspended material, classification of water. Water Quality criteria for drinking, industrial and agricultural uses.
2. Sources of Pollution: Various sources of groundwater pollution. Activities generating contaminants. Hazardous wastes.
3. Principles of Pollutant Movement and Attenuation in the Ground. Groundwater movement in the saturated zone. Factors affecting pathogen movement, Factors affecting pathogen survival.
4. Nitrate Pollution of groundwater. Natural occurrence of nitrates. Sources related to Man's Activities.
5. Contaminant hydrogeology: Theory, Methods and techniques.
6. Management of groundwater quality: General principles, monitoring. Selection of parameters for monitoring. Design of monitoring systems. Critical path monitoring. Aquifer protection schemes. Techniques for the improvement of contaminated groundwater. Economic consideration in groundwater quality management.

APPENDIX-VII

(Reference Res. No. 5 (II) of the minutes)

SYLLABUS OF M.E. (Civil) WATER RESOURCES ENGINEERING

M.E. (Civil) Water Resources Engineering	} Common paper.
Or	
M.E. Environmental Engineering	

Paper I : Applied Mathematics :

- (1) Vector Calculus : Vector and scalar point functions
Gradient, curl and divergence. Divergence and Stokes's theorems and their applications.
- (2) Curves, surfaces and volumes : Curvilinear co-ordinates
Area and volume of a curved surface, Maxima & Minima.
- (3) Complex variables : Cauchy—Riemann equations.
Analytic and Harmonic functions. Taylor's and Laurent's series. Cauchy and Residue theorems along with their applications. Conformal mapping by elementary functions.
- (4) Matrices : Multiplications of matrices, Transpose, conjugate, adjoint and inverse of a matrix, solution of Linear algebraic equations. Cramer's rule. Eigenvalue problem and its engineering applications.
- (5) Differential Equations : Solution of ordinary (first order and second order) differential equation. Bessel function, Fourier Series. Partial Differential equations. Transform solutions, Green's function. Convolution theorem. Wave equation. Laplace equation. Dirichlet problem.
- (6) Numerical Analysis : Methods for obtaining numerical solutions to problems arising in engineering Algebraic equations. Interpolation. Numerical integration of ordinary linear differential equations. Finite difference methods for solution of linear partial differential equations.
- (7) Probabilities and sets. Discrete sample spaces. Combinatorial theory. Postulates of probability. Conditional probability. Probability Distributions. Binomial and Poisson distributions. Multivariate probability distribution. Probability densities and distribution functions.

Uniform, exponential, gamma, normal and chi-square distributions, Multivariate probability densities. Mathematical expectations and moments of discrete and continuous variables. Linear combinations of random variables. Central limit theorem.

Paper II : Fluid Mechanics :

Mathematical foundations of Fluid Mechanics. Historical development. Ideal fluid theory. Foundations of flow analysis. Basic laws for systems & control volumes. Continuity equation. Euler's equations, Bernoulli equation. Linear momentum equation. Application. Vector notation.

Incompressible irrotational flow, Circulation, vorticity, velocity potential, stream function and flow-nets. Superposition of flows. Pressure distribution around submerged bodies. Lift. Magnus Effect. D'Alembert Paradox.

Real fluids. Viscosity and its significance. Stokes viscosity law. Navier-Stokes equations. Couette flow. Flow in a circular pipe. Creeping motion. Parallel flow past a sphere. Stokes' law for terminal settling velocity and Oseen correction.

Boundary Layer Theory Laminar boundary layers. Two Dimensional Boundary layer equations. Blasius solution for flat plate. Momentum integral equation, displacement and momentum thickness.

Separation. Vortex trail. Boundary layer control by various methods.

Introduction to turbulent flow. Eddy viscosity, Reynolds stresses and significance. Mixing length theory. Turbulent boundary layer. Velocity distribution. Application of momentum integral equation.

Pressure distribution around immersed bodies. Calculation of Drag and lift. Form drag, skin friction drag, total. Dimensionless Numbers. Euler, Reynolds, and Froude's number and their significance.

Paper III : Economic Principles of Water Resources Planning and Systems Engineering :

1. Introduction : General economic problem, scarcity. The concept of the production Function, short run production function, long run production, simple examples of Water Resources projects explaining the concept of production function. The net benefit function and optimality conditions.

2. Objectives other than national economic efficiency. Procedures for incorporating multiple objectives in project design and selection.

3. Economic Factors Affecting System Design: Budgetary constraints.

4. Measurements of Economic Efficiency Benefits and Costs. Examples of project benefits and costs. Measurement of benefits and costs comparable in monetary terms. Use of the cost of the best alternative project as a measure of benefits. Issue of secondary benefits and costs.

5. Comparison of Benefits and Costs over time: Rate of return. Annual cost and annual worth comparisons. Present worth analysis. Determination of the discount rate. Benefit and cost patterns over time. Appropriate length of the planning period.

6. Criteria for Project Design and Selection: Consideration of a broad range of alternatives. Rules for optimum selections of projects. Intangible benefits. Introduction to cost-effectiveness analysis.

Paper IV : Surface Water Hydrology :

1. Meteorology: Atmosphere as a vehicle for transfer of water humidity. Precipitation, evaporation. Weather forecasting. Determination of the total rainfall on an area : of area intensity. duration of maximum rainfall. Probable maximum precipitation.

2. Measurement of Surface Flow: Methods of measurement and instruments : velocity and area. chemical dilution. gauging structures. The stage discharge relation.

3. Evaporation and Infiltration : Measurement and estimation of evaporation from land and water surfaces. Water budget. energy budget and mass transfer methods. Reduction of evaporation. Transformations and its estimation. Evaporation transportation. Factors affecting Anfiltration. Infiltration indices.

4. Hydrograph Analysis : Surface runoff. Overland flow Factors affecting runoff. Rational formula. Hydrography analysis Unit hydergraph. Scurve Hydrograph. Instantaneous Unit hydrograph. Channel and storage routing. Flood estimation. Estimation. of yield. Synthetic unit hydrographs.

5. Statistical Methods in Hydrology :

(a) Statistics : Sampling distributions. Point estimation. Statistical interen and Decision theory. Unbiased esti-

mators. Method of maximum likelihood. Interval estimation. Confidence intervals. Tests of Hypothesis : Simple hypotheses. Neyman-Pearson Lemma. Tests concerning means and variances.

- (b) Analysis of discrete and continuous hydrologic data. Harmonic analysis. Statistical analysis including frequency analysis. Normal, Log-normal and Pearson distributions, Correlation and regression analysis, Multivariate Analysis.
- (c) Probability paper and plotting of data. Curve fitting. Method of least squares. Simple linear regression and correlation.

Paper V : PRINCIPLES OF STRUCTURAL DESIGN :

(1) Theory of Electicity : Analysis of strain and stress. Stress strain relation Concept of elastic strain energy. Strain energy expressions. Complementary energy.

Plane strain and plane stress problems. Equilibrium equations in displacements. Stress compatibility equations.

(2) Soil Mechanics : Soil sampling, Shear strength of soils, pore pressure. Strength behaviour, stress paths, stress plots and strength generation mechanics. Earth pressure on sheet piles and buried conditions, Footing and Raft foundations.

(3) Water-retaining structures : Use of codal provisions for water retaining structures and design of R.C.C. circular, rectangular and intze tanks including underground reservoirs.

Paper VI (a)— LAND AND WATER MANAGEMENT

1. Irrigation Soils : Soil moisture movement. Irrigation and water requirements of crops. Unsaturated flow in porous media. Moisture profiles during infiltration due to ponded water.

2. Irrigation Methods : Elements of irrigation control structures. Irrigation and distribution systems. Corrugation and furrow irrigation, Border strip irrigation, sprinkling and drip irrigation. Sub-irrigation. Land levelling.

3. Drainage : Physical and mathematical theories of till and ditch drainage. Design of a drainage system.

4. Conservation of water resources : conservation practices, command area development. Lining of canals and water courses. Evaporation control mulching. Multiple cropping. Irrigation practices in arid and semi-arid lands.

5. Soil erosion : Soil credibility, rain and flow erosivity, slope and length effect, gully erosion, erosion equation. Control of soil erosion.

6. Flood control : Flood plain management. Flood damages. Structural and non-structural measures of flood control.

7. Mathematical Models of Land and Water management. Con-junctive use of surface and ground water.

Paper VI - (b) Chemistry and Microbiology for Public Health En-gineers :

1. Elements of water chemistry : Solution and suspension of impurities, solutions and solubility, Solutions of Ionised Solutes, Chemical equilibria in solution. Acid base equilibria. Oxidation-Reduction processes. Electrode potentials. Rates of chemical reactions. Absorption isotherms. Electrekinetic properties of colloids. Stability and Congulation of colloids.

2. Basic concepts of Bio-chemistry : Enzymes. Buffers. Bio-chemistry of Carbohydrates, proteins, fats and oils.

3. Analysis of water and waste water: Physical, chemical and bacteriological tests commonly used for the analysis of water and waste water.

4. Fundamentals of Sanitary Microbiology: Bacteria (forms, cells structure, chemical composition. Metabolism) Algae (identification, classification. cultural media metabolism) Protozoa, Retifers. Crestraces. Worms and Larvae. Energy concepts in biodegradation. Synthesis, growth and death of micro-organism. Population dynamics.

Paper VII (a) :—Free Surface Flow :

1. Energy and momentum principles in open channel flow. Prin-ciples of varied flow.

2. Non-uniform flow: Direct integration methods, steps methods computer methods. Spatially varied flow.

3. Channel controrls : Sharp crosted weins. overflow spillway free overall and energy dissipators.

4. Channel transitions : Expansions and contractions changes, of directions, culverts. bridge piers. lateral inflow and outflow, transition design.

5. Unsteady flow: Equation of motion. Shallow water equations and their solutions. Methods of characteristics, Dam-Break problem. Kinematic wave theory. Flood movement in long rivers

6. Waves: Standing waves, waves in a moving stream. Finite amplitude wave theory.

7. Similitude and Models : Basic principles. Incomplete and approximate similitude. Fixed-bed river and structural models. Moving-bed models.

Paper VII (b) :—Environmental Engineering-I :

1. Unit Operations : Fluid Transport in open conduits. Mixing Sedimentation. Flow through beds of solids. Vacuum filtration. Gas transfer. Adsorption.

2. Unit Processes : Water stabilization. Congulation. Disinfection Ion exchange. Electrodialysis. Defluoridation and desalination of water. Taste and odour control. Biological oxidation principles.

3. Kinetics of plugflow and completely mixed reactors. Batch processes. Activated sludge processes and its modification. Oxidation ditches and aerated lagoons. Trickling filters. Waste stabilization ponds.

4. Aerobic and Anaerobic digestion of sludge. Handling and disposal of digested and undigested sludge.

5. Disposal of sewage by dilution self-purification of stream. Disposal of sewage on land. Sewage farming.

Paper VIII (a)—Irrigation Structural Design :

Dams, Different kinds of dams and the choice criteria. Gravity Dams : Various forces acting and their analysis and representation. Stability requirements. Two dimensional analysis. Distribution of normal and shear stress. Principal stresses. Joints and their treatment.

Foundation treatment, grouting, drainage well, drainage, galleries, stress concentration.

Embankment dams : Homogeneous and zoned earthen embankments. Foundation requirements. Typical cross-sections.

Stability analysis of earthen dams. Slip circle methods. Wedge method. Seepage through and beneath dams. Cosgrange's base parabola. Calculation of seepage rate. Flow net during steady seepage and during sudden drawdowns. Pore pressures and their

significance. Design of filters and rock toes. Slope protection. Earth moving equipment.

Rockfil dams and Earth-rock dams. Construction techniques of embankment dams. Modes of failure.

Arch dams. Constant angle, constant radius and double curvature dams.

Methods of analysis. Clinder theory, Flastic theory. Trial load analysis. Intruction to modern methods of analysis.

Spillways. Different types of spillways and their design criteria. Design of stilling basins. Design of weirs an canal structures on permeable foundations. Khosla theory and applications.

Paper VIII : (b) —Environmental Engineering-II :

1. Principles of water quality management.
2. Water Treatment Plant Design: General design considerations. Types of Plants. Detailed design of various units such as : Aeration Rapid Mixing and Flocculation. Sedimentation, Filtration, Chlorination and disinfection.
3. Design of water distribution system. Hardy cross methods.
4. Design and Construction of sanitary and Storm Sewers: Surveys and investigations, Quantity of Sanitary Sewage. Quantity of storm water. Design of Sewer Systems. Menholes. Sanitary Sewage Diversion and Storm water overflow devices. Siphons. Materials for sewer construction. Construction methods.
5. Design of water and stormwater pumping stations.
6. Sewage Treatment Plant Design : Detailed design of various units of sewage treatment plants.
7. Principles of industrial waste treatment. Collection and disposal of solid wastes.

Paper IX—Ground Water Hydrology :

1. Occurrence of ground water. Porous materials. Darcy's law. Permeability and porosity. Anisotropy Hydraulics of ground water. Differential equations of flow.
2. Potential Flow : flowments, boundary conditions. Steady State flow. Confined aquifer. Unconfined aquifer.

3. Mechanics of well flow and pumping tests : Steady and unsteady flow in confined and unconfined aquifers. Boundary effects and methods of images. Leaky aquifers. Partial penetration of wells. Interference of well. Yield of wells.

4. Ground water development. Tubeswells. Artificial recharge. Conservation. Ground water prospecting ground water level fluctuations. Salinity of ground water. Ground water pollution galleries.

Paper X : (i)—Advanced Fluid Mechanics :

1. Ideal fluid flow : Three dimensional Line source and sink, doublet flow in a corner and other examples of superposition. Principles of conformal mapping.

2. Laminar flow : Approximate solutions of Navier Stokes' equation for simple cases. Laminar two dimensional jet. Flow past a wedge. Parallel streams in laminar flow.

Hydrodynamics of jets, wakes and cavities. Spreading of wakes. Elements of Dispersion and diffusion. Vertex fields, vertex rings and vertex sheets. Kelvin's theorem.

3. Turbulent flow : Reynold's equations. Measurement of turbulence. Iso-tropic turbulence and its dynamics. Turbulent diffusion. Energy spectrum.

4. Differential equations of motion for unsteady flow in pipes and channels and methods of solution.

5. Elementary Two phase flow in porous media.

6. Flow-induced vibrations. Stability of flow. Vedernikov and Strouhal Numbers.

Paper X : (ii)—Advanced Hydrology :

1. Principles of hydrometeorology cloud seeding. Weather forecasting.

2. Instantaneous unit hydrographs. Time area diagrams. Conceptual mathematical models. Hydrologic system. Analysis and system synthesis. Non-linear systems.

3. Simulation models for rainfall and runoff relationship.

4. Stochastic Hydrology. Time series analysis.

5. Physical and mathematical principles of steady and unsteady ground water movement. Solution of ground water problems by conformal mapping. Boussinesq equation and its solution.

6. Principles of ground water management.

7. Hydrology of floods and droughts. Statical theory of extreme values. Gumbels asymptotic distribution for floods and the droughts.

Paper X : (iii)—Advanced Design of Irrigation Structures :

1. Design of buttress dams. Unit column method. Multiple-arch dams. Miscellaneous dams. Instrumentation for concrete dams.

2. Design of vertical lift sector gates. Flow induced vibrations and down-pull forces. Gate seals.

3. Design of ponstocks, surge tanks and tunnels for water carriage system. Intake and Trash-rack design.

4. Design of outlet sluices through dams.

5. Principles of design of hydro-power stations. Underground installations.

6. Aesthetics in design of irrigation structures.

7. Construction planning of dams. Dewatering. Cofferdams.

8. Design of canal falls and regulations. cross drainage works. canal outlets and river training works.

Paper X (iv)—Advanced Public Health Engineering Design :

1. Recent advances in wastewater treatment technology Developments in physical, Chemical and biological treatment processes.

2. Molecular diffusion of mass in binary systems. Statistical theory of diffusion. Longitudinal dispersion.

3. Design of water treatment and wastewater treatment units.

4. Industrial wastewater treatment : Pre-treatment methods. Centrifugation and filtration. Microstrainers. Evaporation and concentration. Distillation. Neutralization. Liquid-solid separation. Biological oxidation. Removal of specific components. Activated carbon absorption. Reclamation of wastewater effluents. By product recovery. Ion exchange systems. Design of waste water treatment units from typical industrial wastes such as pulp and paper, woolen mills, steel and petroleum industries.

Paper X : (v)—Water Resources Systems :

Introduction to the fundamentals of water resources systems analysis, involving the determination of the optional dimensions, target outputs, and operating policies of water resource projects. Overview of methodologies of analysis : Use of optimization techniques for solving water resources problems. Examples in water distribution systems, flood management, river basin planning for irrigation and hydroelectric power. The storage yield relationship. Reservoir design. examples in surface and groundwater revoirs. Water resources investment timing; capacity expansion of water supply alternatives. Decomposition and multi-level optimization in water resources management.

APPENDIX-VII

(Ref. Res. No. 5 of the minutes)

M.E. IST SEMESTER

MATHEMATICS

Statistics :

Diagrammatic presentation of data. The normal Binomial and poisson distributions. Comparison of means and variances. Linear and multiple regression, Analysis of variance. Introduction to experimental design and to other methods of multivariate analysis.

Numerical Analysis :

- (i) The solution of non-linear equations by Newton Raphson secant and Regula-falsi methods.
- (ii) Interpolation and Approximation : Lagrangian Polynomial. Linear Interpolation, Inverse Interpolation, Finite difference Calculus, Central Forward and backward differences formula.
- (iii) Numerical Integration by trapezoidal, Simpson and Newton—Cotes methods Gaussian quadrature.
- (iv) Matrix Methods, solution of linear equations by elimination Matrix inversion the Eigen values problem, Gauss-seidel method.
- (v) Solution of Differential equations, Euler methods, Discussion on stability and convergence.

M.E. (MET.) I SEMESTER

Research Techniques in Metallurgy :

(i) *Techniques involving extreme environment :*

High temperature and low temperature techniques.
High pressure and vacuum techniques.

(ii) *Techniques involving material analysis:*

Electron Microprobe. X-ray diffraction and X-ray fluorescence.

(iii) *Techniques of structure Determination :*

X-ray, electron and neutron diffraction.

(iv) *Techniques for direct observations of lattice imperfections :*

X-ray and electron microscopy, etch-pit, techniques, fieldion microscopy.

(v) *Techniques of Thermodynamic Measurements:*

Measurements of activity, equilibrium constant, free energy and other thermodynamic parameters.

M.E. (MET.) IST SEMESTER**Advanced Materials Science :**

Free electron theory and band theory. Electrical properties of materials, insulators and semi-conductors. Simple semi-conductor devices. Magnetic and thermal properties of metals, superconductivity.

Structure of crystalline and non-crystalline solids imperfections in materials, their classification and influence on properties. Equilibrium and non-equilibrium transformations in materials. Theory of elastic, plastic, viscous and viscoelastic deformation. Strengthening mechanisms in solids, Dislocation theories of yielding and work hardening, Mechanism of creep, fatigue fracture and super-elasticity.

Properties and applications of steel, alloy steels cast irons and non-ferrous metals and alloys of industrial importance.

Formation and structure of high polymers, properties and applications of plastics, rubbers, whiskers, ceramics, composites and ceramic coated materials. Materials for use in outer space and deep sea bio-materials.

Advanced Aluminum Technology :

Extractive metallurgy and recent developments. Melting, solubility of gases and degassing. Solidification casting principles and practices. Hot and cold working. Extraction, impact extrusion, rolling. Wire drawing, stress relieving and stress control. Application and properties of wrought and cast alloys. Joining and finishing methods Anodizing corrosion, stress corrosion.

M.E. (MET.) II SEMESTER**Advanced Nonferrous Metallurgy :**

Physico-chemical aspects of roasting, agglomeration, calcination, oxidation reduction reactions, smelting and converting, refining

processes, hydrometallurgy and electrometallurgy with reference to common non-ferrous metals.

Developments in beneficiation and preparation of ores, refining of the following metals with emphasis on the physical, chemistry and the process involved.

Uranium, Thorium. Beryllium, Zirconium, Titanium, Tungsten, Molybdenum. Silicon.

Production of high purity metals. Role of Oxygen in non-ferrous metallurgy, Present status of non-ferrous metallurgy with reference to Indian conditions.

Physical Metallurgy of Nonferrous Metals and Alloys (*Elective*) :

The course will deal with the metals copper, nickel aluminium, lead, zinc tin their alloys, critical appraisal of their applications.

Physical properties, electronic and crystal structure. Thermal, electrical and magnetic properties. Alloying nature, phase diagrams of important alloy-systems. Non-equilibrium modifications. Structure and property changes. Thermodynamics and kinetics, theories and mechanism of heat treatment processes, Corrosion and oxidation characteristics.

Deformation and heat treatment. Effect of temperature, alloying additions and impurities, Recovery, recrystallisation and grain growth. Metallurgy. Fabrication and joining techniques, Power Metallurgy.

Advanced Metallurgical Thermodynamics (*Elective*) :

Application of thermodynamics to the analysis of the physical and chemical behaviour of metals.

Thermodynamic principles underlying extraction refining of metals at high temperatures.

Fundamentals of statistical thermodynamics and its application to metallic systems.

Advanced treatment of the thermodynamic properties of metallurgical systems. Properties of solutions. Thermodynamics of interfaces.

Non-equilibrium solid state phase transformation. Gas-metal and slag metal reactions.

Advanced Metallurgical Kinetics (*Elective*) :

Kinetics of homogeneous and heterogeneous reactions. Design of reactors. Absolute reaction rate theory. Dimensionless groups and similarity criterion.

Kinetics of nucleation and growth process. Kinetics of electrode processes.

Principles of heat, mass and momentum transfer and their applications in metallurgical processes (i.e. solid gas solid-liquid, solid-solid, liquids-gas and liquid-liquid reactions).

Modes of heat transfer. Heat transfer in stationary systems. Convective heat transfer. Radiation heat transfer.

Diffusivity and mechanism of mass transport. Steady state diffusion, Unsteady state diffusion. Convective mass transfer, simultaneous and heat mass transfer.

Nature of viscosity and viscous flow in gases and liquids.. Velocity distribution in laminar flow. Isothermal systems. Special kinds of flow.

Kinetics of solidification, iron reduction, sulphur phosphorus and carbon removal in steel making vacuum melting chlorination processes sintering and decomposition processes etc.

Single particle reaction systems. Packed bed and Fluidized bed systems. Gas bubbles in liquids. Gas-jet liquid systems.

Physical Metallurgy of Light Metals and Alloys :

The course will deal with the metals aluminium magnesium, titanium, beryllium and their alloys and a critical appraisal of their applications.

Physical properties : Nuclear, electronic and crystal structures, thermal, electrical and magnetic properties alloying nature. Phase diagrams of important alloy systems. Non-equilibrium modifications. Structural and property changes, thermodynamics, kinetics, theories and mechanisms of precipitation hardening. Internal oxidation and S.A.P. and composite materials Diffusional processes.

Deformation and Heat treatment. Effects of temperature, alloying additions and impurities. Recovery and recrystallisation Metallography. Fabrication and joining techniques, Powder metallurgy.

Advanced Mineral Dressing (Elective) :

Communication—physical concepts of fracture, theories of crushing and grinding.

Theoretical basis of ore beneficiation by gravity electrical and flotation concentration. The phases in flotation systems. Surface tension, contact angles. Gibb's absorption equation. The physical chemistry of solid-solution interfaces. Electrical effect of interfaces electro kinatic phenommenone at gas liquid interfaces. Mechanism and modulation of collection. Kinetic considerations in flotation.

General principles of mill location, mill design and construction, mill operation, mineral dressing economics. milling cost and evolution of metallurgical results.

Operational Research and Computer Programming (Elective) :

Decision making models and their use in metallurgical industries.

Simulative models. Monte carlo-method, hand simulation (of inspection of castings) Computer simulation packaged library programmes. Used to evaluate strategies in a hot tube piercing plant.

Optimisational models—linear programming by graphical algebraic and simplex routines. Applied to leastcost furnace charge calculations and mechine time allocation problems.

Transporation methods. Stepping Stone, algorithm using N.W. Coner and Dagel methods, Applied to assigning orders to a metallurgical plant.

Computerisation of optimising methods, use of library programmes on large problems.

Queneing theory—review of theory. application of finite length and infinite length. Queneine equations to problems in breakdown, maintenance and flowproduction respectively.

Heuristic simulation. rules of skill. priority rules constrain application in computer programme. in forging production schedule and in a hot rolling mill.

Computer Programming :

Introduction: Types of computers. digital. analogue and the hybride internal working of computers. communication using input/output facilities.

Fortran IV Language: Arithmetic operations, Arithmetic statement, input/output, Read, print and write Statements, Formate statements for Real Integer and sexponent field skip specifications. Go to Statement. Arithmetic I.F. Computed go to and Nested, Do statements, Centinue statement, logical expression and logical I.F. double and single precision statements. Complex statement subscribed variables and Dimension statement, Call statement, DATA/BLOCK DATA statements.

Flow diagram and programming for the metallurgical problems such as :

1. Thermo chemical data calculation.
2. Adiabatic flame temperature calculation.
3. Calculation of blast variable for a given ediabatic flame temperature.
4. Cooling problems in a transfer of hot metal.
5. Computing the scrap requirement in steelmaking.
6. Heat transfer problems in steady and unsteady state as applied to metallurgical Engg.
7. Linear Programming and optimization problem.
8. Linear regression analysis in metallurgical Engg.
9. Network analysis for metallurgical maintenance and production.

Production Management and Control :

Production, planning, control and scheduling. Inventory control. Facilities for planning. Importance in matalurgical industries.

Forecasting, trend analysis using moving average, expentially smoothed moving average and regression techniques applied to prediction of market price of metals and raw materials.

Inventory control, Economic bath quantity model stock out costs, probabilistic demands. Applied to forgoing stock inventory levels.

Standards at specification Inspection objectives, efficiency indices.

Sampling, control charts, statistical quality control producer and consumer risks and the power of tests.

Organisation of quality control department and human relations aspects in an integrated metallurgical plant.

Process Control—On line and off line methods. Illustrated by reference to control of steelmaking. Aluminium production rolling and forging etc. Types of computers suitable for such applications. Instrumentation in metallurgical industries.

Nonferrous Foundry Practice Elective :

Recent developments in moulding materials special testing methods. General consideration of liquid metals. Oxidation and oxidation losses and reaction of molten metal with other materials.

Gasses in liquid metals. factors affecting their solubility casting defects attributable to dissolved gasses and their effects on the mechanical properties. Control of melting practices.

Casting processes. moulding. gating and resereng. Ingot making. semicontinuous and continuous casting.

Design consideration such as section thickness and types directional solidification, shrinkage effects and spots. Cored holes.

Melting and casting practices as applied to common non-ferrous foundry alloys. Special melting techniques like vacuum melting and electron beam melting.

General methods of testing including non-destructive tests. Salvaging and finishing.

Lay-out of a modern non-ferrous foundry.

Industrial Metallurgy (Elective) :

Layout of metallurgical industries and their units.

Methods of determining efficiency and productivity of manufacturing units and factors affecting them.

Network techniques Gnatt chart, C.P.M., PERT. Application to metallurgical Industries and maintenance. Time and motion study.

Energy and material balances and flowsheets. Evaluation of various iron and steel making processes. Study of fuel and refractory policy of metallurgical industries.

Industrial Budgeting and Cost Management (Elective) :

Fundamentals of Book-keeping. Financial book. Manufacturing-Account. Working Account. Valuation of Stock in trade. Depreciation and Reserves, adjusting entries. Profit and Loss Account Balance Sheet. Valuation of Assets. Goodwill Account of Joint Stock Companies. Capital and Revenue items fixed and floating capital. Income and Expenditure account.

Financial statements and Ratio analysis, Working capital, Fund flow and cash flow statements, variance, significant ratios, aims objects and computation inference.

Cost Accounting : Fixed and variable expenses, break-even analysis. Various methods of costing: elements of cost, direct and indirect cost Allocation of costs. Absorption and Marginal costing: Cost control Profit volume ratio marginal analysis differential analysis standard costing variance analysis.

Budgetary Control : Types of budgets, budget performance.

Financial Management and Profit gearing, Requirement and sources of finance. Cost of capital, Control over utilisation of the finance capital allocation under certainty, Investment criteria, concept of Profit present worth and is counting principles equivalent annual profit, Short term and long term planning objective and decisions.

APPENDIX-VIII

(Ref: Resolution No. 5 (ii) of the Minutes)

M.E. IN ELECTRICAL ENGINEERING

FIRST SEMESTER:

A. Written Papers :

	Hrs./ Week.	Exam. Hrs.	Max. Marks
1. Numerical Methods and Computer Programming	3	3	100
2. Network Theory	3	3	100
3. Power System Analysis	3	3	100
4. Power System Stability	3	3	100
5. Elective-I (any one of the following)	3	3	100
(a) Digital Electronics			
(b) EHV A.C./D.C. Transmission			
(c) Power System Planning and Reliability.			
	<hr/> 15 <hr/>		<hr/> 500 <hr/>

B. Sessional & Course work :

6. Numerical Methods and Computer Programming	2	50
7. Network Theory	2	50
8. Power System Analysis	2	50
9. Power System Stability	2	50
10. Elective—I	2	50
Grand Total :	<hr/> 25 <hr/>	<hr/> 750 <hr/>

SECOND SEMESTER:

A. Written papers :

1. Advanced Relaying & Switchgear.	3	3	100
2. Operation & Control of Power Systems.	3	3	100
3. Computer Methods in Power Systems.	3	3	100

- | | | | |
|--|---|---|-----|
| 4. Elective-II (Any one of the following). | 3 | 3 | 100 |
| (a) Power Electronics | | | |
| (b) Instrumentation | | | |
| (c) Transients & H.V. Engg. | | | |

12400**B. Sessional & Courses work :**

- | | | |
|--|---|-----|
| 5. Advanced Relaying & Switchgear. | 2 | 50 |
| 6. Operation & Control of Power Systems. | 2 | 50 |
| 7. Computer Methods | 2 | 50 |
| 8. Elective-II | 2 | 50 |
| 9. Project | 5 | 150 |

Grand Total :25750**THIRD SEMESTER:**

- | | |
|-----------------|-----|
| 1. Seminar | 100 |
| 2. Dissertation | 400 |

Total :500**Overall Grand Total=2000 Marks.**

Total contact hours in the 3rd Semester will not be less than 25 week.

APPENDIX-IX

(Ref: Res. NI. 5 (iii) of Minutes)

M.E. COURSE IN MECHANICAL ENGINEERING
(PRODUCTION AND INDUSTRIAL ENGINEERING GROUP)

Teaching Scheme

Ist Semester	Teaching Hours per week.	Exam. Hours.	Maximum Marks.
A. Written paper :			
1. Mathematical Optimisation Techniques in Mech. Engineering.	3	3	100
2. Industrial Management	3	3	100
3. Design & Manufacture of Production Machines	3	3	100
4. Materials Technology (Mech.)	3	3	100
5. Elective-I	3	3	100
(i) Network Analysis & Computerised Management.			
(ii) Reliability and Maintenance Engg.			
(iii) Theory of Elasticity and Plasticity.			
	15		500
B. Course work including Practicals & Sessionals:			
6. Coursework in Mathematical Optimisation Tech.	2		50
7. Course work in Industrial Management.	2		50
8. Course work in Design of M/C Tools.	2		50
8. Course work in Materials Tech.	2		50
10. Course work in Elective-I	2		50
	10		250
	25		750

SECOND SEMESTER:**A. Written paper :**

1. Operation Research Methods in Mech. Eng.,	3	3	100
2. Work Study & Industrial Psychology.	3	3	100
3. Instrumentation	3	3	100
4. Elective-II	3	3	100

(i) Product Design and Production

(ii) Design of Tools, Jigs and Fixture.

(iii) Project evaluation & Management.

12

400

B. Course work including Practicals & Sessionals :

5. Course work in ORME	2	50
6. Course work in W.I.P.	2	50
7. Course work in Instrumentation.	2	50
8. Course work in Elective-II	2	50
9. Project/Special assignment	5	150
	<hr/> 13	<hr/> 350
	25	750

THIRD SEMESTER:

1. Seminar	5	100
2. Dissertation	20	400
	<hr/> 25	<hr/> 500

Grand Total of Marks :

2000

APPENDIX-X

(Ref: Resolution No. 5 (iii) of Minutes)

Teaching and Examination Scheme.

IST SEMESTER:	Exam. Hours.	Paper Max. Marks	Course work Max. marks.
1. Mathematics (Structures)	3	100	50
2. Foundation Engg. and Retaining Structures.	3	100	50
3. Theory of Elasticity	3	100	50
4. Instrumentation (Structures)	3	100	50
3. Elective-I (Any one of the following)	3	100	50
(a) Theory of Plates & Shells.			
(b) Elastic Stability			
	15	500	250
SECOND SEMESTER:			
1. Materials Technology (Structurer)	3	100	50
2. Advanced Analysis of Structures	3	100	50
3. Elective-II (Any one of the following).	3	100	50
(a) Advanced Design of Structures.			
(b) Structural Dynamics			
4. Elective-III (Any one of the following) :	3	100	50
(a) Prestressed Concrete			
(b) Computer Methods in Structural Engineering.			
5. Project	—	—	150
	12	400	350
THIRD SEMESTER:			
1. Seminar			100
2. Dissertation			400
			500

Over all Grand Total : 2000 Marks.

APPENDIX-XI

(Ref: Res. No: 8 of the minutes)

MALVIYA REGIONAL ENGINEERING COLLEGE
JAIPUR.

Prof. S.V. Kulkarni,

PRINCIPAL

No. 2975

Dated : 10-3-83.

The Registrar,
University of Rajasthan,
Jaipur.

*Sub:—*Agenda for meeting of Board of Studies in Engineering
and Technology—Draft Ordinances for M.E. Course.

Dear Sir,

It is proposed to admit students to M.E. Course twice a year to fall in line with the general practice as obtaining in other Engineering Institutions. With this aim in view of the following paragraph needs to be included in the beginning of O.319-Q-V :—

“Admission to M.E. Course will normally be made twice a year, once in July when the first semester commences and then in January next when the second semester commences. The students who are admitted in January will appear first in second semester examination in April/May and subsequently in first semester examination in November/December the same year. After this, they will join the third semester.”

I am, therefore, to request you to kindly place this matter as a table item for consideration by the Board of Studies in Engineering and Technology being held on 17th March, 1983.

Your's faithfully,

Sd/-

Principal

MINUTES OF THE MEETING OF THE COMMITTEE OF
COURSES IN NURSING HELD ON 23rd. JULY, 1983
AT 3 00 P.M. IN THE VICE-CHANCELLOR'S SECRE-
TARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present

1. Shri G.K. Sharma (Convenor)
2. Dr. Rameshwar Sharma
3. Dr. R.N. Singh
4. Dr. M.L. Sharma
3. Shri R.S. Trivedi
6. Dr. V.N. Sharma (Special Invitee—Representing,
Director Medical and Health
Services, Rajasthan State,
Jaipur).
7. (Mrs.) P.K. Peters (Special Invitee, Registrar,
Rajasthan Nursing Council,
Jaipur).

N. B. :—1. Dr. (Miss) A. Chandi, Kanpur could not attend the meeting.

2. The post of Dy. Director (Training), Medical and Health Services, Rajasthan, Jaipur being reported not existing any more as such a seat of external member of C.O.C. in Nursing fallen vacant for the residual term of C.O.C. in Nursing ending on 23rd December, 1983.

1. The committee noted that no statements of qualifications and teaching experience etc. of teachers received from affiliated institution and other Universities were placed before the committee though Convenor reported that during the adjourned meeting of the C.O.C. October, 1982 same were submitted to the University Office. The panel of examiners placed before the C.O.C. was not upto-date in view of the meeting of faculty of medicine of 30/31st August, 1982 which included a supplementary panel appended with the minutes of the C.O.C. 4/5th June, 1982. 3rd item of the Faculty of Medicine of 30th August, 1982. The convener

strongly stated that the relevant papers may be searched and he can not get them type again and again, and preferred to resign from convenorship but members persuaded him to continue. However, the committee resolved that the existing panel be continued.

2. The committee perused the reports of examiners and offered no comments on the same. However, the committee is of the opinion that the paper setters be again requested to be more careful with regard to mistakes in question papers.

It was also suggested that the Principal of the institution may kindly look into the suggestions made by the examiners for improvements in the Nursing practices in the hospital wards for providing equipments and supplies to the students and for regular clinical supervision by the teachers of the College and so also hospital staff in view of non-availability of clinical instructors in the existing strength of the teachers of the College though qualifications etc. for the clinical instructors have been mentioned in the University hand book ordinance 65 but posts are yet to be sanctioned by Government. Similarly, the deficiencies in other areas be made up by the institution and the practical examinations may be arranged in Nursing as discussed in view of suggestions of the examiners in their reports.

3. The committee considered recommending the courses of study and text books for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes :-

1. B.Sc. (Nursing) Pt. I Examination, 1984
2. B.Sc. (Nursing) Pt. II Examination, 1985
3. B.Sc. (Nursing) Pt. I.I Examination, 1986
4. B.Sc. (Nursing) Pt. IV Examination, 1987
5. B.Sc. (Nursing) Post Basic Pt. I Examination, 1984
6. B.Sc. (Nursing) Post Basic Pt. II Examination, 1985.

In this connection the Committee also perused the recommendations of the Indian Nursing Council (third revision, 1981) made at its meeting held on 11th Feb, 1982, so reported by Shri G.K. Sharma and confirmed by the Secretary Indian Nursing Council

vide her letters 5th October and 8th November, 1982 addressed to Registrar, University of Rajasthan and the stencils for cyclostyling of this old syllabus submitted by Shri G.K. Sharma, Member, C.O.C. in Nursing.

The committee after a great deal of deliberations *resolved* to recommend as under :-

- (i) A letter be sent to the Secretary, Indian Nursing Council Temple Lane, Kotla Road, New Delhi, with regard to changes in courses curriculam and other matters directly to the Registrar, University of Rajasthan, Jaipur.
- (ii) As no letter with regard to implementation of the revised curriculam is received by the University from the Secretary, Indian Nursing Council, the revised curriculam (Third revision 1981) *be not* applicable for present.
- (iii) The committee after considering Rules, Regulations, Ordinances, syllabus and syllabus revised by the convener in consultation with Shri R. S Trivedi, Member, in the light of the recommendation of India Nursing Council *resolved* that the same may be cyclostyled and circulated to the members for their comments to be placed in the next meeting of C.O.C. as and when it meets.
- (iv) A letter be sent to the Secretary, Indian Nursing Council to send 10 copies of the revised curriculam (Third revision 1981) with attestation on corrections inserted in the cyclostyled copy or preferably to send printed copies to the University of Rajasthan, Jaipur expeditiously with the information upto which year same is to be implemented, alongwith relaxations granted to other Colieges/institutions in Nursing in India.
- (v) Till then the existing courses be repeated for the aforesaid examinations.

4. The committee considered a proposal of the convener to change the minimum qualifications for admission to B.Sc. Nursing part-I examination in terms of trends and developments and recommendations of Indian Nursing Council for courses in General Nursing and midwifery diplomas as well as degree courses in Nursing and resolved to recommend as under :—

O. 299 V-3 :—

Clause (a) of O. 299 V-3 be changed as under :—

No candidates shall be allowed to be admitted to the B.Sc. (Nursing) Part-I course until :

- (i) He/She has completed the age of 17 years at the time of admission or will complete the age on or before 31st December of the years of his admission to B.Sc. (Nursing) Part—I Course and
- (ii) (a) He/She has passed the First Year Science Examination of Three Years Degree Course (Pass/Hons.) of the University of the Intermediate examination in Science of the University (conducted before 1958) or of the Board of Secondary Education, Rajasthan or the Higher Secondary Examination (Science) conducted by a statutory Board at the end of 12 years study under the 10+2 pattern of Secondary Education or any other examination recognised by the University as equivalent thereto in all the compulsory subjects and the Optional subjects of the Medical group (Physics, Chemistry, and Biology) including English as one of the Compulsory subjects :

Notes :—

- (i) For Natural Born scheduled caste and scheduled tribe candidates the minimum marks required at the qualifying examination or in the pre-medical test; as the case may be shall be 40% instead of 45% (for general candidates).
- (ii) Where the seats reserved for Scheduled Caste and scheduled tribes students in the state can not be filled for want of requisite number of candidates fulfilling the minimum requirements prescribed for the state, than the vacant seats be filled upon all India basis with Scheduled Caste and scheduled Tribes candidates getting not less than the aforesaid minimum prescribed pass percentage.
- (iii) A candidate who has passed in the compulsory subject of General Hindi and General English

and the Optional subjects of the Medical group (Physics, Chemistry and Biology) of the First Year Examination of the Three Years degree course in Science conducted the University shall be deemed to have passed the first year T.D.C. (Science) Examination for the purpose of this Ordinance.

5. The convener pointed out that the results of 2 candidates of B.Sc. (Nursing) have not been released as yet. The committee *resolved* that the results be declared expeditiously.

The meeting ended with a vote of thanks to the chair

Sd./-

Convener

Committee of courses in Nursing

**MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN MEDICINE AND PHARMACEUTICS HELD ON THE
12TH AUGUST, 1983 AT 2.00 P.M. IN THE
VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.**

Present :

- | | |
|-------------------------|--|
| 1. Dr. B.B. Maitrya | (<i>Convener</i>) |
| 2. Dr. J.S. Mathur | |
| 3. Dr. F.S.K. Barar | |
| 4. Dr. O.P. Kulshrestha | |
| 5. Dr. N.K. Harneja | |
| 6. Dr. S.R. Mehta | |
| 7. Dr. O. Saxena | |
| Dr. S.D. Bhardwaj | <div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 3em; margin-right: 10px;">}</div> <div style="text-align: center;"> <div style="border-left: 1px dashed black; height: 100px; margin: 0 auto 0 auto;"></div> </div> </div> |
| Dr. K.B. Lal | |
| Dr. C.K. Joshi | |
| Dr. J.C. Sharma | |
| Dr. H.N. Mangal | |
| | <i>Special Invitees</i> |

N.B. : 1. Dr. Rameshwar Sharma, Dean of the Faculty was also present in the meeting.

2. Dr. (Miss) Hitesh Bhargava, Ajmer, Dr. B.P. Gupta, Udaipur (Internal-Members), Dr. G.C. Sharma, Jaipur, Dr. Ram Singh, Agra (External-Members) and Dr. K.C. Rai, Udaipur (Special Invitee) could not attend the meeting.

1. Under clause (iv) of Sub-section (4) of Section 34 of the University Act, the Board *elected* Dr. O.P. Kulshrestha, Professor and Head of the Department of Ophthalmology, S.M.S. Medical College, Jaipur as member other than the Convener of the Board of Studies to serve on the Committee for selection of Examiners for the year.

2. The Board *perused* the reports of examiners and question papers set for the examinations of 1982, and suggested that paper setters should be sent instructions in detail and follow them.

3. The Board considered the recommendations made by the following Medical Education and Research Committees at their meetings held on the dates noted against each :

	Date
1. Medicine & Allied specialities	16-3-83
2. Surgery & Allied specialities	16-3-83
3. Ophthalmology and E.N.T.	17-3-83
4. Gynaecology and Obstetrics	17-3-83
5. Community Medicine	17-3-83
6. Anatomy	18-3-83
7. Physiology	18-3-83
8. Pathology and Microbiology	18-3-83
9. Pharmacology	19-3-83
10. Forensic Medicine	19-3-83
11. Bio-Chemistry	19-3-83

Resolved to recommend that the recommendations of the aforesaid Medical Education and Research Committees *be accepted* with the following modifications/observations :

(I) Surgery & Allied specialities :

Ref. Res. No. 4 of the Committee :

The recommendation be accepted. Necessary amendments in the notes appearing under the heading 'Surgery including Orthopaedics' to R. 27 be made by the Faculty.

(II) Ophthalmology & E.N.T. :

Ref. Res. No. 1 of the Committee :

The second para of the recommendation suggesting that since two subjects of ophthalmology and E.N.T. are included in this group to give even representation to each subject, the Convener'ship should rotate between Ophthalmology and E.N.T. after end of each term be not accepted, and status-quo be maintained.

(III) Physiology :

Ref. Res. No. 4 of the committee :

- (i) The revised scheme regarding allocation of marks recommended by the M.E.R.C. be not accepted in view of the mandatory recommendations of the Medical Council of India.
- (ii) The recommendation with regard to passing in theory and practical separately be accepted. The Board recommended that the recommendation be followed in all the subjects of the undergraduate examinations. The candidate be required to obtain 50% marks in theory and 50% marks in practical separately. Necessary amendments to the regulations with regard to marks be made by the Faculty.
- (iii) The recommendation appearing in para 3rd of the recommendation be not accepted and status-quo be maintained.

(IV) Pathology & Microbiology :

(i) Ref. Res. No. 5 of the Committee :

The recommendation to the effect that for the undergraduate examinations in Pathology & Microbiology, out of the two internals and two externals, one each should be from Pathology and Microbiology be accepted.

(ii) Ref. Res. No. 6 of the Committee :

The recommendation be not accepted.

(iii) Ref. Res. No. 8 of the Committee :

The matter be referred to the Faculty for deciding in all the subjects.

(iv) Ref. Res. No. 9 of the Committee :

It be referred to Medical Council of India, New Delhi to revise the nomenclature of the Diploma in Microbiology as 'Diploma in Clinical Microbiology and Helminthology' in its recommendations.

(V) Pharmacology :

(i) *Ref. Res No. 3 (I) of the Committee :*

The amendments suggested by the Committee on page 7, 8, 9 and 55 and be accepted and the amendments suggested for page 14 and 18 of the syllabus of M.B.,B.S. (1980 Edition) be not accepted.

(ii) *Ref. Res. Na. 3 (iii) of the Committee :*

The changes suggested by the Committee be not accepted.

(4) Arising out of the discussions vide foregoing Res. No. 3 (IV) (ii) of the Board, the Board recommended that (i) in the M.E.R.Cs. in Medicine and Allied specialities and in surgery and Allied specialities there should be 11 members in each instead of nine, and (ii) in the M.E.R.Cs. in Ophthalmology and E.N.T. and in Pathology & Microbiology there should be seven members instead of five. Necessary amendments in Statute 42-E of the University Hand Book Pt-II be made by the higher bodies.

(5) The Board *resolved that* the Conveners of the various Medical Education and Research Committees be requested to get the panel of examiners up-dated.

(6) Under Statute 42-E of the University Hand-Book Pt-II the Board appointed members to serve on the following Medical and Education Research Committees for the residue of the term ending on the 16th August, 1985 :—

(I) Medicine & Allied Specialities :

1. Dr. R.K. Bhargava. *Vice* Dr. Ramavtar Sharma
Prof. & Head of the Deptt. of Medicine, (since retired)
S.N. Medical College, JODHPUR.
2. Dr. S.R. Mehta *Vice* Dr. M.S. Mathur,
Prof. & Head of the Ajmer.
Deptt. of Medicine,
S.M.S. Medical College,
JAIPUR.

- | | | |
|----|---|--------------|
| 3. | Dr. Y.K. Malhotra,
Prof. of Skin & V.D.
S.N. Medical College,
JODHPUR. | Re-appointed |
|----|---|--------------|

II. Surgery & Allied Specialities :

- | | | |
|----|--|--|
| 1. | Dr. R.K. Harneja,
Prof. & Head of the
Deptt. of Surgery.
S.N. Medical College
JODHPUR. | <i>Vice</i> Dr. S.K. Pandey
(since expired) |
| 2. | Dr. O Saxena,
Prof. & Head of the
Deptt. of Surgery,
S.M.S. Medical College.
JAIPUR. | <i>Vice</i> Dr. K.N. Bhargava |

III. Ophthalmology & E.N.T. :

- | | |
|--|----------------------------|
| Dr. H.K. Kukreja,
Prof. & Head of the
Deptt. of E.N.T.,
J.L.N. Medical College,
AJMER. | <i>Vice</i> Dr. A.K. Gupta |
|--|----------------------------|

IV. Community Medicine :

- | | | |
|----|---|-----------------------------|
| 1. | Dr. C.K. Joshi.
Prof. & Head of the Deptt.
of Community Medicine,
S.P. Medical College, BIKANER. | <i>Vice</i> Dr. K.S. Ojha |
| 2. | Dr. K.S. Ojha,
Prof. & Head of the Deptt.
of Community Medicine,
S.N. Medical College,
JODHPUR. | <i>Vice</i> Dr. I.U. Dudani |

V. Anatomy :

- | | |
|---|------------------------------|
| Dr. M.K. Patni.
Prof. & Head of the
Deptt. of Anatomy,
S.M.S. Medical College
JAIPUR. | <i>Vice</i> Dr. Mahesh Verma |
|---|------------------------------|

VI. Physiology :

Dr. L.K. Kothari,
Prof. & Head of the
Deptt. of Physiology,
S.M.S. Medical College,
JAIPUR.

Vice Dr. R.L. Ajmera

VII. Biochemistry :

1. Dr. T.I Singh,
Prof. & Head of the
Deptt. of Biochemistry,
S.P. Medical College,
BIKANER.

Vice Dr. C.R. Vyas

2. Dr. D.R. Singhvi,
Prof. & Head of the
Deptt. of Biochemistry,
S.N. Medical College,
JODHPUR.

Vice Dr. (Mrs.) Nisha Khalsa

VIII. Pharmacology :

Dr. V.K. Pendse,
Prof. & Head of the
Deptt of Pharmacology,
S.N Medical College,
JODHPUR.

Vice Dr. K.P. Singh

IX. Forensic Medicine :

Dr. S.K. Pathak,
Prof. & Head of the
Deptt. of Forensic Medicine,
S.M.S. Medical College,
JAIPUR.

Vice Vacant post

7. The Board considered a letter No. 361/Pharm/83, dated 28th May, 1983 received from Dr. F.S.K. Barar, Professor and Head of the Department of Pharmacology, S.M.S. Medical College, Jaipur regarding closure of M.Sc. (Med) Pharmacology Course/ Degree for the non-medical students (*vide Appendix I*).

Resolved to recommend that the proposal of Dr. Barar with regard to closure of M.Sc. (Med.) Pharmacology Course Degree for the non-medical students be not accepted. However, the Board feels that the minimum eligibility for admission to M.Sc. (Med.) Course be increased to M.Sc. and M. Pharm. from B.Sc. and B.Pharm.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(Dr. B.B. Maitrya)
Convener

APPENDIX—'I'

(*Ref. Res. No. 7 of the minutes*)

From :

Dr. F.S.K. Barar,
Professor & Head,
Department of Pharmacology,
S.M.S. Medical College,
JAIPUR.

No. /Pharm/83

Dated : 28-5-83

To :

The Registrar,
University of Rajasthan,
Jaipur.

*Sub. :—*M.Sc. (Med.) Pharmacology Course/Degree for
Non-Medical Candidates Closure of.

Sir,

In connection with the subject cited above, a meeting of all the post-graduate teachers of the Department was held on 6-5-83, in order to discuss the progress and performance of the Non-Medical Students pursuing the above Course as well as the future of Pharmacology in the Medical Colleges in the State. The matter was discussed at length and it was desired by all present that the salient features of the discussion be conveyed to the University with a request for immediate action :—

1. That initially M.Sc. (Med.) Pharmacology Course was started for Medical Graduates at Jaipur and at Bikaner under Co-guide System to start with followed by full Guide System. The University got this course/degree/examination inspected by the M.C.I. also.
2. That later on in the year 1965/1966. M.D. (Pharmacology) degree was started exclusively for Medical Graduates and the University got it, and is periodically getting it inspected by the M.C.I. also.
3. That after this University had declared that the M.Sc. (Med.) Course/Degree in Pharmacology shall be exclusively for Non-Medical students and the eligibility prescribed was B.Pharm/B.Sc. (Med./M.Pharm/B.V. Sc. & A.H./B.D.S. with an addition of B.Sc. (pass course) in 1975/76. This Course/Degree Examination has not been got inspected by the M.C.I. since its beginning till today by the University. Further, this course in its present shape and form is being run at Jaipur and at

Bikaner only, probably because those were the two places initially where M.Sc. (Med.) Course used to run for Medical Graduates.

4. It was discussed that the Non-Medical students with the above mentioned basic qualifications find themselves totally unsuitable/misfit/lost to pursue the course because their background is entirely different than that of Medical Graduates. These students fail to understand and appreciate even the common terms, terminology used since they have never been trained in the Medical subjects upto their graduation level.
5. When such persons teach the Medical Students (who are going to doctors and treating the suffering human beings) they again find themselves totally unsuitable to teach anything regarding the applied aspect of the subject.
6. *The progress and performance of these Non-Medical students is extremely poor in understanding the subject as well as in the Examinations.*
7. That since the time M.Sc. (Med.) Degree for Non-Medical Students has been started in Pharmacology, the in out of Medical Graduates has decreased tremendously probably because it has become a strong deterrent for them.
8. That now again with the introduction of Part I & II, it has become practically impossible for a Non-Medical Student to pursue and pass the subjects of Anatomy, Physiology, Bio-Chemistry, Pharmacology and Pathology including Microbiology in a period of one and half year, which a Medical student completes in a period of three years.

Keeping all these facts and our experience in view we are of the strong opinion that the M.Sc. (Med.) Pharmacology Course for Non-Medical Students be stopped forthwith so that the medical students be trained in a proper manner by the teachers with the basic medical qualifications. It need not be overemphasised that the M.C.I. in its recommendations has stressed the need for teaching the Applied and Clinical Pharmacological aspects of the subject for which such candidates (Non-Medical) are completely unsuitable.

It is requested that this matter is taken up by the University at an early date and the Faculty of Medicine takes up the above suggested, reasonable decision in the interest of relevance of Pharmacology as a subject in the undergraduates Medical curriculum. It is further requested that the opinion of the Faculty

of Medicine and the MERC (Pharmacology) be obtained in this matter at an early date.

Through this communication, I move the opinion of the entire postgraduate Teaching Unit of this Department for due consideration/reference.

Thanking you.

Yours faithfully,
Sd/-
(DR. F.S.K. BARAR)

No. /Pharm/83/

Dt. 25-5-83

Copy forwarded for needful to :

1. The Dean, Faculty of Medicine & Pharmaceutics, University of Rajasthan, Jaipur (Department of P.S.M., S.M.S. Medical College, Jaipur)
2. Head of the Department of Pharmacology, Bikaner/Udaipur/Ajmer/Jodhpur.
3. _____

Sd/-
Dr. F.S.K. Barar

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN MEDICINE AND ALLIED SPECIALITIES HELD ON 16th MARCH, 1983 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY OF RAJASTHAN, JAIPUR.

Present

1. Dr. K.B. Lal (Convener)
2. Dr. A.P. Mathur
3. Dr. T.N. Sharma
4. Dr. J.P. Sethi

1. Under Clause (4) of Statute 42-E of the University Hand Book Part II, the Committee appointed Dr. K.B. Lal, Prof. & Head of the Department of Paed Medicine, J. L. N. Medical College, Ajmer as Convenor of the Medical Education and Research Committee in Medicine and Allied specialities for a term of three years.

2. The Committee scrutinised the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of under-graduate, post-graduate and Diploma Examination in the subject and its allied specialities and revised the panel accordingly.

3. The Committee recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any as follows :—

- I. Final M.B., B.S. Examination, December, 1987.
NO CHANGE
- II. M.D. Examination, December, 1984.
NO CHANGE
- III. Post-graduate Diploma Examination, May, 1984.
NO CHANGE

4. The Committee considered and *approved* the plans of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each.

<i>S. No.</i>	<i>Name</i>	<i>Subject</i>
1.	Dr. Hans Raj Jain	: "A study of serum and Urinary zinc estimations in alcoholics."
2.	Dr. Rrvindra Kumar Gupta	: "A study of incidence of Australia antigen and Liver function tests in Laprosy"
3.	Dr. Shyam Sunder Sharma	: "A study of glycosylated haemoglobin and serum protein bound hexore in diabets meyuitus."
4.	Dr. Chandra Mohan Goyal	: "Endoscopic and Histopathological study of 50 cases of Non-Ulcer Dysperia,"
5.	Dr. Aseem Chudhary	: "Oral propranolol as a medical treatment for portal Hypertension. A double Blind clinical trial in patients."
6.	Dr. Komal Bajaj	: "A critical evaluation of Ehrlichs ttests in Defection of Different malignancier."
7.	Dr. Leela Dhar Bhardwaj	: "A study of serum cholesterol and serum triglycerides in chronic usens of canmabis Indica."
8.	Dr. R.C. Godhra	: "A comparative study of coagula defects in cases of viperine bits with or without bleeding disorders"
9.	Dr. Rajendra Kumar Chhabra	: "A study of serum cholestorol and serum dirglycoride in noonata cord blood."
10.	Dr. Alok Gupta	: "A study of effects of the legume of cyamopris tetragonolob (Guar) and prosopies sincraria (Sangri) in the control of diabetes mollitus."

11. Dr. Chiranji Lal Gahlot : "An epidemiology study of acute intermittent porphyria in Rumbhar (Pattern) of Bikaner Municipal Area."
12. Dr. Ashok Ramdeo : "Alterations of immunoglobulins in Viral hepatitis."
13. Dr. Arun Gupta : "Role of Ispaghula husk in hypertension, diabetes mellitus and hyperlipidaemias."
14. Dr. Anil Talwar : "Epidemiological survey of heart diseases in school children in Bikaner."
15. Dr. Hari Kishan Goyal : "Study of effect of aspirin and low Molecular weight extract on platelet adhesiveness in cases of cerebral thrombosis."
16. Dr. Arvind Gupta : "A study of quantitative estimation of glycosylated Hemoglobin (Glycated Hemoglobin) in patients receiving different modes in therapy for diabetes mellitus."
17. Dr. Bal Krishan Man Singh : "Study of serum uric acid level in chronic alcoholics."
18. Dr. Vishnu Dutt Vyas : "Observation on serum free fatty acid level in cases of Pulmonary tuberculosis."
19. Dr. M.S. Rajpurohit : "Study of effect of Low Dose aspirin on platelet adhesiveness in Acute myocardial Infarction."
20. Dr. Jagdish Singh Shekhawat : "Role of heparin therapy in the Management of poisonous snake Bites Echis carinatus."
21. Dr. Mohan Lal Rathore : "A study of disopyramide in the prophylaxis of cardiac arrhythmias in cases of acute myocardial infarction."

1	2	3
22.	Dr. Suresh Bohra	: "Role of estimation of serum magneseum in Diabetes mollitus."
23.	Dr. Nirmal Kumar Surya	: "Study of serum Zinc level in Delayed Puberty."
24.	Dr. H.K. Sharma	: "Evaluation of autiarrhythmic status of Carbanagepine."
25.	Dr. Raja Ram Sharma	: "Sorum Ornithine Carbamoyl transferase (Oct.) activity in viral hepatitis an various hepatic disorders."
26.	Dr. B.N. Taparia	: "A study of life stresses and other risk factors in Oschaemic heart diseases."
27.	Dr. Ajay Kumar	: "A stndy of Blood Glucosecontrol the Diabetes mollitus by estimation of stable glycosylates Halmoglobin."
28.	Dr. Vipin Pandey	: "Effect of exercise on Haematocrit and Plasma Viscosity in Diabates Mollitus."
29.	Dr. Shushil Kumar Kumbhat	: "The role of anabolic slaroid."
30.	Dr. Ashok Vardhan Chordiya	: "The study of Histopathology of small intestine in 25 cases of chronic diarrhoea."
31.	Dr. Shekhar Kumar Shah	: "Evaluation on Various endpoints of ischaemic responses in treadmill exercise testing."
32.	Dr. Subh Ram Sharma	: "A Study of Electrical diagraphic chanbes in peripartum period in different age group of women."
33.	Dr. B.M. Yadav	: "Plasma viscosity in normal Healthy subjects."

34. Dr. Sujata Bhandari : "Hepatitis B. Surface antigen in subjects with chronic Hepatomegaly"
35. Dr. Paras Mal Suriya : "Plasma Viscosity in obesity"
36. Dr. Rakesh Kumar : "Clinical Laboratorial Histopathological study of 25 cases of the carcinoma."

AJMER

37. Dr. Mohini Changulani : "Effect of Bran on intestinal transit-time in normal healthy individuals & patients suffering from irritable bowel syndrome."
38. Dr. P.C. Jain : "Platelet adhesiveness and fibrinolytic activity in cases of diabetes mellitus before and after antidiabetic drugs."
39. Dr. Pankaj Srivastava : "A comparative study of surface and esophageal Electrocardiogram in cases with poor Precession of R. Wave in precordial leads."
40. Dr. Bharat Butaney : "Effect of intravenous propranolol on the extent of acute myocardial infarction as evaluated by precordial ST segment mapping."
41. Dr. Narain Singh : "Immunodeficiency in diabetes mellitus."
42. Dr. Ashok Surana : "Clinical study of cases of chronic bronchitis with special reference to its epidemiology."
43. Dr. Rajendra Kumar Gokhroo : "A study of total Glycosylated haemoglobin in acute myocardial."
44. Dr. Jaishri Sharma : "A study of Natural History of Cor pulmonale with special reference to Development of various arrhythmias and left ventricular functions".

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| 45. | Dr. Avinash Swaroop : | "Effect of exercise in Platelet adhesiveness in ischaemic heart diseases." |
| 46. | Dr. Surjeet Singh : | "Effect of oral propranolol on platelet adhesiveness in patients with angina pectoris before and after exercise." |
| 47. | Dr. Narender Kodhani : | "Estimation of serum zinc." |
| 48. | Dr. Anil Kumar Luniya : | "A study of estimation of total glycosylated haemoglobin in diabetes mellitus." |

UDAIPUR

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| 49. | Dr. Manohar Ahuja : | "A clinical study of cases with common allergic disorders with special emphasis on foods as casual allergen." |
| 50. | Dr. Mahendra Kr. Mandawat : | "A clinical study of cases of Allergic bronchial asthma with special emphasis on incidence and pattern on insect allergy at Udaipur." |
| 51. | Dr. Karan Singh Punia : | "A clinical study of cases of myocardial infarction with special reference to relative diagnostic and Prognostic significance of serum phosphoenolpyruvate kinase and Aspartate Aminotransferase A & B conventional enzymes." |
| 52. | Dr. Lalit Chand : | "Comparative evaluation of bronchodilator efficiency of aminophylline, ophedrine, salbutamol and terbutaline in cases of COPD." |
| 53. | Dr. Mahesh Kumar Dialani : | "Serum magnesium levels in case of cardiac arrhythmias and role of magnesium in prevention of cardiac Arrhythmias." |

54. Dr. Bal Mukund : "A clinical study of autonomic dys-
Ajmera functions in Pellagrous peripheral
Neruropathy."
55. Dr. Shallendra Kumar : "A study of the attitude and know-
Jain ledge regarding disease and its
managements in cases of Diabetes
mellitus bases on interview of Dia-
batic patients."
56. Dr. Mahendra Garg : "Health Assessment of workers in
Hindustan Zinc limited with special
reference to serum zinc and cadmium
levels in the Blood."
57. Dr. Gopal Chandra : "A study of Autonomic dysfunction
Ladha (without clinical sensory motor
neuropathy) and psychiatric manife-
stations associate with pellagra."
58. Dr. Subhash Chand : "A study of levels of Zinc in serum
Jain and Cerebrospinal fluid in patients
of tuberculous and pyogenic men-
ingitis."
59. Dr. Kishan Mal : "Correlation of Plasma lipid levels
Methani and Glycosylated Hemoglebin
(HIOA) concontration in cases of
diabetes mellitus."
60. Dr. Hitendra. Kumar : "To study the antihypertensive
Bhavsar effect of Laboratal vevsua alpha-
methyldopat."
61. Dr. Mahendra Kumar : "A study of Glycosylated hemoglo-
Gupta bin in Differect group of Diabetic
patients."
62. Dr. Rajendra Lal Dosi : "To study the effect of intravenous
infusion of Verapamil in hyperten-
sive patients."

M.D. PAEDIATRICS, (JAIPUR)

63. Dr. N K. Mohanpuria : "Serum Copper and histochemical
demonstration of copper in various

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		hapatie disorders with special reference to I.C.C.
64.	Dr. Girish Chandra Arora	: "Evaluation of Buffy Coat smear Examination and microerythrocyte sedimentation rate in early diagnosis of neonatal specticemia."
65.	Dr. Man Mohan Singh	: "Screening of crythrocytic glucose 6 phosphate dehydrogenase enzyme deficiency in the Load blood of newborn in an around Bikaner."
66.	Dr. Santosh Kumar Varshney	: "Neurological status of Wigh risk new borns."
67.	Baltej Singh	: "Prevalence and pattern of learning Disorders among school Children."
68.	Dr. Sita Ram Sharma	: "A study of medicate immunity (T-lymphocytes) in childhood."
69.	Dr. Lila Dhar Joshi	: "Estimation of serum levels of immunoglobulins in Childern with protein caloriemalnutrition."
70.	Dr. Neera Jain	: "A study of serum copper and zinc in Bacterial infections, like upper respiratory tract infections, Broncho-penmeia and Entric fever in Infants and children."
71.	Dr. Lucky Jain	: "Observation on Hematalogic status of Now borne in relation to maternal anaemia."
72.	Dr. Chaman Ram Verma	: "Poper electrophoresis of proteins of CSF and serum in various convulsive Disorders of childhood."
73.	Dr. Avinash Bansal	: "A study of gastric aspirate, volume PH and acidity unfed Neonates."

74. Dr. Sushma Lal : "A study of Australia Antigen in serum and tissues in children with Hepatic disorders with special reference to Indian Childhood cirrhesis."
75. Dr. S. Sitaraman : "A study of serum copper and ceruloplasmin in normal children and cases of protein energy malnutrition."

AJMER

76. Dr. Anil Kumar Saxena: "Relationship of serum alkaline phosphatase concentrations to sex maturity Ratings in Adolescent Boys."
77. Dr. Uma Shanker : "Lencocyta . blood picture in Totala Healthy fulltern and pretern babies during neonatal period with special reference to total Eosinephilcounts."

UDAIPUR

78. Dr. Budh Ram : "Qualitative screening for glucose 6 phosphate dehydrogenase deficiency in Neonales."
79. Dr. Virendra Kumar : "A clinical study of enteric fever in Hospitalised children at Umaid Chopra Hospital."
80. Dr. Anil Kumar Arora : "A study of attitude and knowledge about Breast feeding practices in W. Raj."
81. Dr. Haris Bhurani : "A study of Cerebrospina fluid lactic acid in Intracranial infections."
82. Dr. S.B. Purohit : "A clinical study of Bacterial infections in New borns delivered at Umaid Hospital."

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83.	Dr. Bheru Prakash Sharma	: "A clinical study of childhood amaria in Hospitalised patients at Umaid Hospital."
84.	Dr. Jai Prakash Jain	: "Heath and nutritional status of Primary School children in Urban and rural areas at Jodhpur."
85.	Dr. P.L. Kothari	: "Fort length in neonatal antharoponmetry".
86.	Dr. C.P. Maheswari	: "Study of seconndry factors leading to malnutrition with special reference to prevalence of Intestinal Parasites in A rural area of UDAIPUR."
87.	C.K. Mishra	: "A comparative study of impect of Health services."
88.	Dr. Suresh Chandra Goyal	: "The Medico-Social study of new born."

M A. RADIOTHERAPY

89.	Dr. Dharam Pal Singh	: "Assessment of status of urinary tract in cases of cancer of Uterin cervix."
90.	Dr. Kuldeep Singh	: "Therapeutic effect of oral sinsulphate administration in Maliganancy."
91.	Ds. R.C. Joshi	: "A comparative study of effects of Radiotherapy and chemotherapy on Metastatic Livercarcinoma."
92.	Dr. Mani Ram	: "Once a weel fractionation in Radiotherapy for advanced Uterine cervix carcinea."

M.D.T.B.

93. Dr. Ghan Sayam Rathi : "Incidence of associated pleuro-pulmonary fungal infection in cases of tuberculosis and its effect on prognosis."
94. Dr. Dinesh Kothari : "Study of vitamin A vitamin C estimation in common respiratory Diseases with special reference to pulmonary tuberculosis."
95. Dr. T.A. Gajwani : "Cardiac arrhythmias and electrocardiographic changes after oral Bronchodilators."

M.D. RADIO DIAGNOSIS

96. Dr. Mahesh Kumar Vadel : "A study of radiological signs in different grade of protein energy malnutrition in pre-school children."
97. Dr. Jai Prakash Joshi : "The nephrogram : A valuable indication of renal abnormalities."
98. Dr. Diwakar Malhotra : "Electrocardiographic changes during intravenous pyelography."
99. Dr. D.D. Gupta : "Radiological pattern of silicosis with relation to duration of exposure in stone workers at Jodhpur"
100. Dr. Umaid Singh : "Renal osteodystrophy"
101. Dr. Daleep Singh Rathore : "Positive contrast wrist orthography in chronic wrist pain."
102. Dr. Arvind Kumar : "Excretory voiding Urethrogram in the investigation of Urethral disease in males."
103. Dr. Shri Kishan Rathi : "Evaluation of microfinned Barium sulphate as a Branch orphic contrast medium."

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104.	Dr. Amar Singh Swarnkar	:	"Evaluation of diagnostic efficacy or double contract Barium meal examination as compared with conventional Barium meal and endoscops."
105.	Dr. R.N. Koolwal	;	"Percutaneous transhepatic cholangiography in cases of Jundicol."

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN SURGERY AND ALLIED SPECIALITIES HELD ON THE 16TH MARCH, 1983 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. M.P. Singh (Convener)
2. Dr. R.K. Agarwal
3. Dr. K.N. Bhargava

1. Under Clause (4) of Statute 42-E of the University Hand-Book Pt.-II, the committee *appointed* Dr. M.P. Singh, Prof. and Head of the Deptt. of Surgery, S.P. Medical College, Bikaner as convener of the Medical Education and Research Committee in Surgery and Allied Specialities for a term of three years.

2. The Committee scrutinised the Statement of Qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners, of under graduate, Post-graduate and Diploma Examinations in the subject and its allied specialities and revised the panel accordingly.

3. The Committee *recommended* Courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any as follows :—

I. Final M.B., B.S. Examination, December, 1987 :—

Add the following book at Sr. No. 10 under the heading Books recommended :—“ 10—Operations—Surgery—By K. Das.”

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| II. D.M. Examination, Dec., 1984 | — | No Change. |
| III. M.Ch. Examination, Dec., 1984 | — | No Change. |
| IV. M.S. Examination, Dec., 1984 | — | No Change. |
| V. Post-graduate Diploma Examinations May, 1984 | — | No Change. |

4. The Committee recommended that a clarification be made in the Syllabus of the Final M.B., B.S. Examination :

"The examiner in orthopaedics will be internal examiner for one year and external examiner next year. In the year in which the one of the internal examiner is from orthopaedics the two external examiners will be of general Surgery. If one of the external examiner is of Orthopaedics then the two internal examiner will be of General Surgery".

5. The Committee considered and *approved* the plan of thesis of the following candidate who have applied for registration of the subject of their thesis noted against :

S. No. 1	Name of Candidate 2	Subject of Plan 3
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M.S (GENERAL SURGERY) :

DR. S.N. MEDICAL COLLEGE, JODHPUR :

1. Dr. Raman Kumar Bhasin : "A Retrospective Clinicopathological study of Renal Tumors."
2. Dr. Kailash Narayan : "An aetopathological study of 50 cases of frank Haematuria."
3. Dr. Bhagwant Swaroop Mathur : "Electrical Injuries a review of 200 cases treated in M.G. Hospital Jodhpur During Last 20 years."
4. Dr. Dinesh Kumar Sharda : "Urethral obstruction in female acinical study."
5. Dr. R.K. Saraf : "Effects of Vasectomy on testis (histopalological aspects) an experimental study on dogs."
6. Dr. Praveen Kumar Gupta : "Salivary Gland Tumahrs A restrospective Clinico-Pathological study."
7. Dr. Vaibhav Kumar : "A prospective and retrospective study of Post-Operative tetamus cases admitted in M G. Hospital."

8. Dr. S.K. Baid : "Transplantation of marless mesh in repair of various fascial tissue Defects."
9. Dr. Jaswant Singh Chauhan : "A retrospective and prospective study of Blunt abdominal trauma."
10. Dr. Man Mohan Harijan : "Clinical study, Cystometry and Post operative complications in renile enlargement Prostale."
11. Dr. Brij Bala Mathur : "Splenic Autotransplantotion in Ratsh."

AJMER :

12. Dr. Avinash Chand Agarwal : "Interperintal use of Povidone godine betadine in abdominal surgery to prevent Post operative wound infection."
13. Dr. Rekha Rani : "Prevention of inteaperitoneal adhosious by chymotryprin."

R.N.T. MEDICAL COLLEGE, UDAIPUR

14. Dr. Anil Kumar Baxi : "Mineral profile of stone formers with special reference to trace elements and effect of cystone treatment."
15. Dr. Shyam Prakash Mathur : "Estimation of serum amylase levels in cases of acute Head Injuries and its diagnostic and Prognostic significance."
16. Dr. Devendra Kumar Gupta : "A study of fecoliths in the diagnosis of acute appendicitis."
17. Dr. Bhupender Kumar Chawla : "A study of cryohaemorrhoidectomy with and without barron Band Ligatic."
18. Dr. Jambi Patni : "Trace elements in Prostatic tissue and serum in prestatic disease of man."

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| 19. | Dr. Yousouf Nobeefux : | "Serum trace elements (Copper, Zinc and Magnesium) in Patients with malignant tumors of digestive organs." |
| 20. | Dr. Aniruddh Kumar :
Purohit | "Ascorbic acid status and the effects of megadoses of ascorbic acid on Urinary oxalate excretion in normal persons and stone formers." |
| 21. | Dr. Deepak Verma : | "Urinary Hydroxy—Proline and oxalate excretions in stone formers before and after cystone therapy and chemical composition of stones." |
| 22. | Dr. Kaillash Chandra :
Panwar | "Clinicopathological study of malignancies in infancy and childhood." |
| 23. | Dr. Mahesh Chandra :
Vidyarthi | "A clinical study of cattle Horn injuries in Udaipur." |

S.M.S. MEDICAL COLLEGE, JAIPUR

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| 24. | Dr. Raj Govind Sharma : | "A clinicopathological study of 50 cases of local Pathology treated by right Hemicolectomy or Local resection." |
| 25. | Dr. Chandra Mohan :
Sharma | "Evaluation of Mannographic findings in lump breast." |
| 26. | Dr. Surendra Garg : | "Reconstructive surgery in Head and neck malignancies with special reference to immediate reconstruction." |
| 27. | Dr. Mahendra Kumar :
Soni | "The use of Combined uroflowmetry Cystometric and electromyography in evaluation of neurogenic Bladder Dysfunction." |

28. Dr. Inder Singh : "Wilms Tumour in infaney and Shekhawat Childhood retrospective study of 45 cases."
29. Dr. Rajesh Kumar : "Cancer of the anorectum and Saboo analysis of 25 cases."
30. Rajendra Kumar Jain : "Clinica and Microbiological evaluation in cases of chronic prostatitis."
31. Dr. Gopal Lal Sharma : "A Clinicopathological study of thyroid nodules with special reference to forozen rection Studies."
32. Dr. K.B. Chhipa : "Acrylic (Mathylmethacry, late) cranioplasty—A clinal study of 25 cases."
33. Dr. Suresh Kumar Jain : "A clinical study of 50 cases of perforation peritonitis (traumatic and nontraumatic)."
34. Dr. Kailash Narain : "An evaluation of Aspiration Sharma cytology in suspected cases of carcinoma breast and its Compa-
rison with routine Histopathologi-
cal Biopsy."
35. Dr. Om Prakash Bansal : "Comparative study of Different surgical Procedures used in the treatment of Maemorrhoids."

J.L.N. MEDICAL COLLEGE, AJMER.

36. Dr. Sharad Jain : "Splenorrhaphy following splenic trauma."
37. Dr. Laxmikant Sharma : "Plasma Cholinasterase levels in cases of Acute Cranio cerebral trauma."
38. Dr. Rajesh Chandra : "Evaluation of rapid method of Nag gut preparation for surgery."

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39.	Dr. Satyendra Nath Mehra	: "Experimental evaluation of cross Linked relation as a sealing Agent in Hepatic and splenic surgery".
40.	Dr. Rajendra Kumar Patni	: "Study of Direct inguinal Hernia operated under Local anaesthesia with special reference to subcutaneous transplantation of spermatic cord in the repair".
41.	Dr. Mahesh Chand Sharma	: "Study of intestinal villus with special reference to etiology and management".
S.P. Medical College, Bikaner		
42.	Dr. Pratap Singh Soha	: "Single Dose intrarectal metronidazole as prophylaxis against wound Infection following emergency appendicectomy".
43.	Dr. Aniruddha Vajpayee	: "A retrospective study of head injury cases admitted in P.B.M. Hospital, Bikaner in last 10 years i.e. 1972-81 and role of heavy dosage of Dexamethasone in reverse head injury in the year 1982
44.	Dr. Shankar Lal Soni	: "A histochemical study of urinary calculi".
45.	Dr. O.P. Mahayach	: "Repair of Common bile duct defects using the gallbladder or cystic duct as a Pedicled graft—An experimental study on dogs".
46.	Dr. K.K. Sharma	: "Role of Zinc sulphate in healing of various types of Chronic ulcers"
47.	Dr. Vijai Kumar Batra	: "A correlative study of 50 patients with urinary calculous diseases with special reference to Quantitative chemical analysis of stones".

48. Hari Ram Pariwal : "Study of elimical, Pathological and radiological features in and accute Appendicitis".
49. Dr. Manroop Singh : Role of Local metronidazole in Grossly Contannunated per stoneal cavity".
50. Dr. Jatan Lal Baid : "A comparative study of topical Povidone, Iodine Betadine Ampicillin, and cephalvidine in Prophylaxis of wound infection in Surgery"
51. Dr. Subhash Sharma : "Burn Wound dressing with human amiotic membrans".
52. Dr. Anil Lal Bhat : "The efficacy of a few commonly used drugs in Prevention of Post Operative peritoneal adhesious".

Jodhpur

53. Dr. S.R. Choudhary : "Post-mortem findings in head injury cases (Prospective study).

Udaipur

54. Dr. Surendra Kumar Sama : "A clinical Profile of the chest trauma in Udaipur".

Jaipur

55. Dr. Arun Kumar Mathur : "Reconstruction of traumatic Defects By Flaps".
56. Dr. Surinder Mohan : "Pulmonary hydatid a clinical study of 25 cases".
57. Dr. Pramod Kumar Kateria : "A clinical study of Socrocoecygoill txratoma in children 28 cases".
58. Dr. Om Prakash Sharma : "Estimation of total Loxo of electrolytes during irtestinal obstruction from gastric aspiration & urine".

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M.S. Orthopaedics		
Udaipur		
59.	Dr. Mohan Lal Mantri :	"Results of Primary moove prosthetic replacement in femoral neck fractures".
60.	Dr. Mukut Bihari Sharma :	"Comparative study of therapeutic response of Pidyral chymotrypsin and hydrocortisone in Low Bock Pain".
61.	Dr. Om Dutt Mathur :	"A study of the 'end results of supracondyla fractures of the humens treated conservatively".
Jodhpur		
62.	Dr. Kailash Chandra Gupta :	"Scoliosis in Poliomyelitis clinico-radiological study."
63.	Dr. Ashok Shinghvi :	"Immunological studies in mycetoma with special references to characterisation of immunoglobulin types".
64.	Dr. Sohan Lal Gupta :	"Study of rerum amind acid by this Layer chromatography in myatoma."
Ajmer		
65.	Dr. Vijay Nand Sharma :	"Functional Bracking in supiration for comminuted intraarticular colles".
66.	Dr. Kamal Kishore Garg :	"Management of Oracture Patella by tension Band Wiring".
Bikaner		
67.	Dr. H.K. Potdar :	"Clinical significance of abnormal posture in Low Back Pain syndrome".

68. Dr. Ravi Pratap Singh : "Clinical assessment of the results of surgical treatment of Paralytic foot in Poliomyelitis".
69. Dr. Vijay Prakash Beniwal : "Pre and Post treatment comparative evaluation of club feet by radiograph and serial foot Print analysis".
70. Dr. R.L. Goyal : "Conservative management of Bockache and sciatic causing, condal epidura tinjection of hydrocortisone acetate and bupivacaine hydrochloride".

Jaipur

71. Dr. Anil Kumar Gupta : "Study of 25 cases of Benuetis frasture distlocation".

M.D. Anaesthesiology

S.P. Medical College, Bikaner

72. Dr. Goverdhan Lal Tanwar : Effect of preoperative starvation on blood glucose concentration in children".
73. „ Rita Vtereja : Awareness during Anaesthesia".
74. „ Hifzur Rehman : A comprative clinical study of effects of glycopyrrolate and atropine on cardioiascular system and intraocular tension."
75. „ Kailash Chandra Ojha : "Effect of atropine of Glycopyrrolate on intrsocular tension. Body temperature sabirary secretion A comprative clinical study.

R.N.T. Medical College, Udaipur

76. Dr. Mahendra Agarwal : "Effect of diethyl Halothano and trichloroethy leve on loagulation Power of Blood".

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77.	„ Shama Gupta	: A clinical comparative study of ventilatory function and Post-operative analysis after intrathacal morphine and Pethidine”.
78.	„ Rajan Nanda	: “Comparisan of subarachnoid and Limber epidural analgesia to general anaesthesia for caesarean section”.
79.	„ Simti Tomar	: “Medication of Idizone and Chymarthrough candal epidural route for relief of Pain and their therapeutic response”.

Jodhpur :

80. „ (Miss) Asha Mathur : “Blood Gas studies A comparative study of the patients who received oxygen with different anaesthetic agents and those who received compressed air with different anaesthetic agents”.
81. „ Amrik Singh Sindhu : “Effect of Segmental continuous Lumber epidural analgesia for relief of Pain during Labour and delivery”.
82. „ Nand Lal Khatri : “An Electro Crdiographic Study”.
83. „ Sharad Singh : “Post Operative Recorvery Score”.
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J.L.N. Medical College, Ajmer

84. „ Dr. Asha Khanna : Study of metoclopramide as a preanaesthetic medication in Prophylaxis of aspiration asphyxia in paediatric Patients”.
85. „ A.E. Contractor : “Candal epidural analgesia in cases of Unilateral sciatica”.

86. Dr. Hari Dutta : "Epidural Morphine and Bupivacaine for the relief of Labour Pains".
87. Dr. Ashok Vijay, : "A comparative study of atropine and glycopyrolate as premedicants in children".
88. Dr. P.S. Nag : "Intrathecal morphine for the relief of Labour Pains".
89. Dr. Madhu Saxena : "Intravenous Lignocaine with diazepam and Pentazone for per oral endoscopies".

Jaipur

90. Dr. Vijay Gupta : "Clinical evaluation of Pentazocine Diazepam and adrug combination of analgin Diazepam & Diphenhydromine hydrochloride as a Preanesthetic medication. A comparison study".
91. Dr. Kiran Chopra : "Effect of innalation and aesthetic agents that trileve & halothane without atropine on gastric PH and Volume".
92. Dr. J.D. Gojar : "Use of Epidural morphine, Pethidine and Pentazocine with 2 Deyroceve for operative and Post operative Pain relief."
93. Dr. Avnish Kumar, : "Comparisen of etomidate with
Bhardwaj the opentone".

The meeting ended with a vote of thanks to the Chair.

Sd'—

(Dr. M.P. Singh)
Convener

MINUTES OF THE MEETING OF THE MEDICAL
EDUCATION AND RESEARCH COMMITTEE
IN OPHTHALMOLOGY & ENT HELD ON
THE 17th MARCH, 1983, AT 12.00 NOON
IN THE VICE-CHANCELLOR'S
SECRETARIAT, UNIVERSITY
CAMPUS, JAIPUR.

Present :

1. Dr. O.P. Kulshrestha (Convener)
2. Dr K.C. Rai
3. Dr. V.K. Satsangi
4. Dr. H.K. Kukreja (Special Invitee)

1. Under clause (4) of Statute 42-E of the University Hand Book Pt. II, the Committee *appointed* Dr. O.P. Kulshrestha, Prof. and Head of the Department of Ophthalmology, S.M.S. Medical College, Jaipur, as Convener of the Medical Education and Research Committee in Ophthalmology and E.N.T. for a fresh term of three years.

Dr. K.C. Rai suggested that since two subjects of Ophthalmology and E.N.T. are included in this group to give even representation to each subject, the Convenership should rotate between Ophthalmology and E.N.T. after end of each term for which Committee members agreed.

2. The Committee scrutinised the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of Under-graduate, Post-graduate and Diploma Examinations in the subject and revised the panel accordingly.

3. The Committee *recommended* courses of study and textbooks in the subject for the following examinations together with

relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any, as follows :

- I. Final M.B.B.S. Examinations, December, 1987 No Change except that the following books be *substituted* to the existing books :—

Books Recommended :

1. Diseases of Ear, Nose and Throat by Logan Turner,
2. Fundamentals of Laryngology—Boice & Poparella,
3. Fundamentals of Oto-laryngology—By Boices,
4. Diseases of E.N.T. by B.K. Roy, Choudhary.

Reference Books E.N.T.

1. Diseases of Ear, Nose & Throat—SCOTT Brown.
2. Diseases of Ear, Nose & Throat—Ballengers.

- II. M.S. Examinations, December, 1984. No Change.

- III. Post-graduate Diploma Examination, May, 1984. No Change.

4. The Committee resolved to recommend that as regards Clinical posting of Students preparing for Final M.B.B.S. Examination, 2 months clinical posting to E.N.T. is recommended instead of $1\frac{1}{2}$ months at present.

5. The Committee felt that in E.N.T. curriculum, the following subjects be covered in the lectures :

Anatomy and Physiology of Ear, Nose and Throat Diseases of Ear (external, middle and internal) nose paranasal sinuses, throat, larynx, trachea and oesophagus.

6. The Committee considered and approved the plan of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each :—

S.No.	Name of Candidate	Subject of Plan
1.	Dr. Dinesh Purohit	: "To find out possible effect of temperature (Sunlight Radiation) and nutrition on early formation of cataract in hot climate of W.Raj."

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2.	Dr. Anand Swaroop Garg	: "Glaucoma in Ajmer."
3.	Dr. Pradeep K. Maheshwari	: "Complications and results of Lens extraction with spacial emphasis to changing pattern of astigmatism".
4.	Dr. Avadhesh Goyal	"Evaluation of therapeutic value of glucose oxide in conjunctivitis."
5.	Dr. Yadevendra Kalia	; "Role of intravenous nitroglycerine therapy on intraocular pressure in Normal persons and glaucomatous patients."
6.	Dr. P.C. Jain	: "A clinical study of topical anti-prostaglandin Durgs (Aspirin and indomethacin) in spring catarrh."
7.	Dr. J.N. Nathvarma	: "Changes in corneal thickness after cataract surgery."
8.	Dr. Bharat Kabra	: "Study of afimmunoglobulins (Ig-G, IgA, IGM) in Trachoma."
9.	Dr. Pradeep Kumar Gupta	: "A retrospective study of retinal arterial changes correlated with other parameters of hypertension in Ischaemic Heart Disease."
10.	Dr. Bhanwar Lal Verma	: "Pressure response to topical corticosteroids in high myopes."
11.	Dr. M.K. Shriya	: "A study of the effects of sublingual organic nitrates on intraocular pressure."
12.	Dr. Narsh Chandra Mittal	: "Experimental evaluation on Role of intravitreal anti iotics."

13. Dr. Lalita Bhandari : "Diagnostic significance of serum zinc level in optic neruities and retinal Diseases of varying etiorogys."
14. Dr. Tribhuwan Kumar : "A comparative study of Refractive errors in educated & Non-educated adolesents of Udaipur."
15. Dr. Sonpat Jindal : "Effect of Locally prepared topical epinephrine in chronic simple glaucoma."
16. Dr. Ashok Kumar Bansal : "Comparative study of ocilar hypotensive drugs."
17. Dr. Arun Kumar Samar : "Bacteria-fungal culture and sensi-tivity in chronic dacryocyatitis in infants."

M.S. (E. N. T.)

18. Dr. Deva Nand Sharma : "Study of trace elements in Head & Neck Chancers."
19. Dr. Dwark Prasad Gupta : "Retrospective study of foreign Body in upper food and air passage."
20. Dr. Anil Kumar Khullar : "A review of Laryngeal tuber-culsois."
21. Dr. Gul Dedlani : "Malig-nancy larynx and Laryngo-pharynse."
22. Dr Prashan Chand Kothari : "A study of upper respiratory tract involvement in laprosy."
23. Dr. Vijay Kumar Mittal : "A assessment of sustachion tube funcations in chronic suppurative otitis media."
24. Dr. Tajender Singh : "Evaluation of Audievestibular manifastations following head injury."

1	2	3
25.	Dr. Bhagirath Kashnia	: "A profiles of mazillary neoplasms,"
26.	Dr. Prakash Chand Chandnani	: "Endolory ngeal microsurgery in Begign laryngeal lessions."

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener.

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN OBSTETRICS AND GYNAECOLOGY HELD ON 17TH MARCH 1983 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. (Miss) Hitesh Bhargava (*Convener*)
2. Dr. (Miss) Gaytri Vijay
3. Dr. (Mrs.) Chandra Kiran
4. Dr. (Mrs.) Vinay Pendse

1. Under clause (4) of the statute 42-E of the University Hand Book Pt. II., the committee *appointed* Dr. (Miss) Hitesh Bhargava, Prof. & Head of the Department of Obstetrics and Gynaecology, J.L.N. Medical College, Ajmer, as Convener of the Medical Education and Research Committee in obstetrics & Gynaecology for a fresh term of three years.

2. The Committee scrutinised the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of under-graduate Post-graduate and Diploma examination in the subject and revised the panel accordingly.

3. The Committee *Recommended* Courses of study and text Books in the subject for the following examination together with the relevant additions and/or alterations to the Regulation and Ordinances and Statutes, if any, as follows :—

- I. *Firsl M.B.B.S Examination. December, 1987*—No Change
- II. *M.S. Examination, December, 1984* —No Change
- III. *Post-graduate Diploma Exam. May, 1984* —No Change

The Committee considered and *Approved* the plan of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each :—

S.No.	Name of Candidate	Subject of Plan
Ajmer		
1.	Dr. Sudha Arora	: “ Uric acid level of Uterine fluid and Blood of Women with normal abnormal manstrual cycle”.
2.	Dr. Shashi Saxena	: “ Obstetrical legacy in Gynaecological Practice”
3.	Dr. Rita Kulshrestha	: “The clinical study of effect of nysterectomy on glucose tolerance test.
4.	Dr. Smita Kulshrestha	: “Clinical study of Menopause”
5.	Dr. Lalit Prabha	“Comparative study of various methods of tubal patency tests. in infertility”.
6.	Dr. Raksh Joshi	: “ Clinico-Pathological study of fetal maturity”.
7.	Dr. Preeti Chaturvedi	: “ A clinical study of Puerperal complications”.
Jaipur.		
8.	Dr. Malika Swaroop	: “ Review of Maternal and Perinatal Mortality and Morbidity in Caesarean sections in Zanana Hospital
9.	Dr. Suman Mandiratta	: “Laprosopic sterlization during purpeurium”.
10.	Dr. Anjana Chauhan	: “Carvical mucus ferning an early reliable test for placental dysfunctions”.
11.	Dr. Meena Motwani	: “Role of complamin in toxamin of Pregnancy and perinotal out come”

12. Dr. Anita Narula : "Trial of terbutaline sulphate in Portphonement of pretar labour".
13. Dr. Chandra Jain : "Critical evaluation of 500 cases of still birth.
14. Dr. Madhu Mathur : "A study of caramel test as an index of human evalation".
15. Dr. Bina Gupta "Laparesocpy, diagnostic aid in the manstrual disorders.
16. Dr. Vijay Lakshmi : "A study of serum Electralytes in Normal and Toxemia of Pregnancy.
17. Dr. (Mrs.) Sneh Lata Bhargava : " Emérgency hysterectomiss in obstetrics-A clinical study".
18. Dr. Sudha Pareek "Estimation of sugar & urea in cervical mucus of 50 infertile cases".
19. Dr. Anju Sharma : "Sorum Magnesium Estimation in normal & foxcemat of Pregnancy".

Jodhpur :

20. Dr. Kailash Narain Pandey : "Blood coagulation studies in toxal mia of Pregnancy".
21. Dr. Sundri Devi Magnavani "Comparative study of serum protein of Mothers at Delivery of Cord Blood".
22. Dr. Aparajita Bisht : "Study of transminase activity in toxaeneia of Pregnancy".
23. Dr. Beena Chandira- mani : "Clinico-pathological study of cases of Pre-manapausal Bleeding"
24. Dr. Úsha Minhas : "Estimation as serum Copper level in follow up cases of Cu-Insertion".
25. Dr. Kamal Jain : "Obstetrical Behaviour of anaemic pregnant woman".
26. Dr. Vijay Sylvanigum : "Laparoscopy in Lelvic pach".

1	2	3
27.	Dr. Rashmi Rajvanshi :	"Relation of Cord serum sodiam levels in new born infants and maternal intravenous therapy during labour".
28.	Dr. Sushma Chaudhary :	"Estimation of serum copper in pregnancy & Toxemia of Pregnancy".
29.	Dr. Merjinder Kaur Bedi :	"Induction of ovulation with clomiphene citrate".
Udaipur :		
30.	Dr. Gyanesh Chandra Shukla :	"Prevalence of anaemia due to obstetrical & Gynaecological factors in women of reproductive age group at Vallabhugen".
31.	Dr. Uma Mehta :	Comparative study of effect of terbutaline sulfate irresuprine hydrochloride & Placental therapy in prevention of premature labour".
32.	Dr. Suresh Gupta :	"Assessment of fetal maturity by amniotic fluid anylase & Modified foam stability Test".
33.	Dr. Pushp Lata Kothari :	"Meconium stained Liquer and foetal outcomes".
34.	Dr. P.C. Veerwal :	"Zinc and Copper status in maternal and Cord Blood (new Born) and their relationship with Birth weight".
35.	Dr. Zubeda Saifee :	"Correlates of Human Umbilical cord length".
36.	Dr. Indira Giri :	"Obstetrical practices & Performance A comparative study of Present & past in six villages of Udaipur District".

37. Dr. Mahendra Kumar : "To study fertility pattern and level of acceptance of family planing measures in women of vallabha-nagar.
38. Dr. Vimla Dhakar : "Study of free aminoacids in normal pregnancy and complicated by toxomia".
39. Dr. Kalpana Mathur : "Glucose tolerance test as a means of identifying intrauterine growth retardation."
40. Dr. Aruna Singhi : "Post sterilization assessment of Luteal function by endometrial Biopsy and vaginal cytology".

Bikaner :

41. Dr. Kamla Kalla : "Teenage Pregnancy".
42. Dr. Veena Srivastava : "A clinical study of the return of fertility following discontinuation of injectable contraceptive nore this terone".
43. Dr. Devika Rani : "Obstetrical profile in woman who have undergone previous medical termination of pregnancy".
44. Dr. B.S. Panwar : "Serum Zinc level in various Himes-ter of normal pregnancy"
45. Dr. Jai Kishan Goel : "Study of I 131 Renogram in normal Pregnancy & toxamia of Pregnancy".
46. Dr. Mukesh Raghav : "The effect of intravenous therapy during labour of Maternal and cord serum sodium levels.
47. Dr. Jaishree Sharma : "Obstetric profile in patients after previous speritaneous abortion".
48. Dr. Mrs. Abha Gupta : "A study of menstrual profile of women using more this terone con-anthate as long acting injectiable contraceptive".

1	2	3
49.	Dr. Sharad Misra	: "Seman Cytochemistry in infortile male".
50.	Dr. Pradeep Sharma	: "Blood gas changes during laparoscopic procedures under local Anaesthesia".

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN COMMUNITY MEDICINE HELD ON THE 17TH MARCH, 1983 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. Rameshwar Sharma (*Convener*)
2. Dr. G.M. Mathur
3. Dr. P.N. Sharma

1. Under clause (a) of Statute 42-E of the University Handbook Pt. II, the Committee appointed Dr. Rameshwar Sharma, Prof. and Head of the Department of Community Medicine and Principal, S.M.S. Medical College and Controller of Attached Hospitals, Jaipur as Convener of the Medical Education and Research Committee in Community Medicine for a fresh term of three years.

2. The committee scrutinised the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of Under-graduate, Post-graduate and Diploma Examinations in the subject and revised the panel accordingly.

However, the Committee strongly felt that the recommendations in respect of appointment of internal examiners as per resolution No. 5 of the Board of Studies dated 7th April, 1982 and approved by the Faculty of Medicine and Pharmaceutics vide its Res. No 2(6) (i) dated 30th and 31st August, 1982 be implemented forthwith.

3. The committee *recommended* courses of study and text-books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any as follows :—

I. Second M.B.B.S. Examination, May, 1986—No change.

II. Final M.B.B.S. Examination, Dec., 1987—No change.

4. The Committee considered and approved the plan of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each :—

S. No.	Name of Candidate	Subject of Plan
1.	Dr. Subhash Mohan Yadav	"Monitoring of children of severe grades Protein energy malnutrition on I.C.D.S. Block Chhoti Sadri."
2.	Dr. (Mrs.) Rajesh Mathur	"A study of Perinatal Mortality."
3.	Dr. R.S. Gupta	"A longitudinal study of Physical growth and morbidity pattern among Low Birth Weight Babies from Birth to six months in Ajmer City."
4.	Dr. Anil Gupta	"An apidemiological study of Anaemia of Pregnancy in a rural population of rural health training centre Naila."
5.	Dr. Shiv Lal Solanki	"A risk under fives in need of special care in field practice area of rural Health Training Centre, Naila."
6.	Dr. M.P. Budani	"Study of Prevalence of hypertension and familial aggregation of Blood Pressure in Higher Income group office going individuals and their families."

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN ANATOMY
HELD ON 18TH MARCH, 1983 AT 12.00 NOON
IN THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

Present

1. Dr. N.K. Harneja (*Convener*)
2. Dr. M.K. Patni
3. Dr. M.S. Rathore
4. Dr. Karan Singh

1. Under clause (4) of Statute 42-E of the University Hand Book Pt. II, the committee *appointed* Dr. N.K. Harneja, Prof. and Head of the Department of Anatomy, S. P. Medical College, Bikaner as Convener of the Medical Education and Research : Committee in Anatomy for a term of three years.

2. The Committee scrutinised the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of under-graduate. Post-graduate and Diploma Examinations in the subject and revised the panel accordingly.

3. The Committee *recommended* courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any as follows :—

I. First M.B., B.S. Examination, December, 1984

NO CHANGE

II. M.S. Examination, December, 1984.

NO CHANGE

III. M.Sc. Medicine Examination December, 1984.

NO CHANGE

4. The Committee considered and *Approved* the plan of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each.

S.No.	Name of Candidate	Subject of Plan
1.	Dr. R.P. Busar	" A study of Dermatoglyphic pattern in Deaf and Dumb with sample observation in cases of Criminal and Juvenile diabetics"
2.	Dr. Jyotsna Joshi	" An experimental study of inhibitory properties of Urine in Invitro calculogenesis".
3.	Dr, P.C. Gupta	" Ages of Epiphyseal Union of the Elbow and Wrist joints amongst the subjects of Rajasthan".

The meeting ended with a Vote of thanks to the Chair.

Sd/-
(Convener)

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN PHYSIOLOGY HELD ON 18TH MARCH, 1983 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT UNIVERSITY CAMPUS, JAIPUR.

Present

1. Dr. B.B. Maitrya (*Convener*)
2. Dr. P.N. Nag
3. Dr. L.K. Kothari

1. Under clause (4) of Statute 42-E of the University Hand Book Part—II, the Committee appointed Dr. B.B. Maitrya, Prof and Head of the Department of Physiology, S.N. Medical College, Jodhpur and Convener of the Medical Education and Research Committee in Physiology for a term of three years.

2. The Committee scrutinised the statements of qualifications and teaching experiences etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of under-graduate, Post-graduate examinations in the subject and revised the panel accordingly.

3. The Committee recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinance and Statutes, if any as follows :—

I. Final M.B.B.S. Examination. December, 1987
NO CHANGE

II. M.D. Examination. December, 1984
NO CHANGE

III. M.Sc. (Med.) Examination. December, 1984.
NO CHANGE

4. The Committee resolved to recommend that the following consequential amendment be made to Rs. 25 of the University

Hand Book Part—II regarding the scheme of Examination for First M.B B.S.—Physiology.

	<i>Max Marks</i>	<i>Min. Pass Marks</i>
Paper I—	80	} 125
Paper II—	80	
Oral—	40	
Periodical	50	
Total	<hr/> 250 <hr/>	
Practical	100	
Day-today Assesment	50	75
	<hr/> 150 <hr/>	

Passing in theory and Practical separately should be compulsory. At present candidates has to pass in the aggregate only and total marks are 300.

The Committee further *resolved to recommend* that in marks list the marks of Paper-I should be shown with Sec. A and Sec. B and in a similar way for Paper-II marks of Sec. A and Sec. B given separately, since all these sections are examined by separate examiners.

The meeting ended with a vote of thanks to the Chair.

Sd—

Convener

MINUTES OF THE MEETING OF MEDICAL
EDUCATION AND RESEARCH COMMITTEE
IN PATHOLOGY AND MICROBIOLOGY
HELD ON 18TH MARCH, 1983 AT 12.00
NOON IN THE VICE CHANCE-
LLOR'S SECRETARIAT
UNIVERSITY, CAMPUS,
JAIPUR.

Present :

1. Dr. H.N. Mangal (Convener)
2. Dr. M.M. Sharma
3. Dr. K.C. Joshi
4. Dr. J.S. Mathur.
5. Dr. I.N. Ramdeo

1. Under clause (4) of Statute 42-E of the University Hand Book Pt. II. the Committee *appointed* Dr. H.N. Mangal. Prof. and Head of the Deptt. of Microbiology, S.M.S. Medical College, Jaipur as convener of the Medical Education and Research Committee in Pathology and Microbiology for a term of three years.

2. The Committee Scrutinised the statements of Qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of Under-graduate. Post-graduate and Diploma Examination and *revised* the Panel accordingly.

3. The Committee *recommended* course of Study and Text-Books in the subject for the following examinations together with relevant additions and/or alternations to the Regulations and Ordinances and Statutes, if any as follows :—

- I. Second M.B.B.S. Examination, May, 1986 No change except the Books recommended Annexure be substituted for the existing books.

II. M.D. Examination, December, 1984. No Change.

III. Post-Graduate Diploma Examinations, May, 1984
No Change.

4. The Committee considered and *approved* the plan of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each :

S. No.	Name of Candidate	Subject of Plan
1	2	3
1.	Sunita Bhargava	: "A study of Phosphohexoisomerase lactate Dehydrogenase and Al dolase in malignancy".
2.	Dr. Godverdhan Lal Dad	: "Histopathology of the Prostate in elderly men with special reference to latent corchinoma".
3.	Dr. Neelu Vashist	: "Incidence and Histopathological study of testicular tumours in Udaipur region".
4.	Dr. Pravin Kumar Jha	: "A study of Glycosylates Hamoglobin in relevance to diabetes mellitus".
5.	Dr. Chandrake Pd. Gupta	: "Clinicopathological Study of lymphomes in Udaipur region".
6.	Dr. S.K. Rao	: "Study of fetal Hemoglobin in malignant neoplasia with special reference to mesenchymal tumors"
7.	Dr. Naresh N. Rai	: "A histochemical study of the uterine and revolical mucin in normal reproductive period of life and its alteration in Pathological conditions".

ANNEXURE

Books Recommended for Undergraduates (Revised March, 1983)

(PATHOLOGY & MICROBIOLOGY)

Title	Author & Publishers
A. Microbiology	
(i) Text book of Microbiology II nd Ed.	—R. Ananthanaraya & G. K. Paniker. Pub :—Orient Longman, New Delhi.
(ii) Review of Medical Microbiology	—E. Jawetz, JI Melnick, 15th Ed. (1982) Pub :—Lange Medical Publication.
(iii) Medical Microbiology XII Ed.	—R. Cruickshank J. P. Duguid Vol. Ist. Pub :—ELBS & Churchill Livingstone.
(iv) Parasitology.	—K D. Chattergee Pub :—Chattergee Medical, Publishers, Calcutta.
(v) Medical Parasitology	—Dey N.C. Calcutta, T.K. Dey.
B. Immunology	
(i) Essentials of Immunology	Ivan M. Roitt. Pub :—ELBS & Balackwell.
(ii) Basic Immunology for students	—Dr. K.R. Joshi Pub :—Satsukrat Sabe Hand Mandal, Jodhpur.
C. Clinical Pathology	
(i) Todd Sanford's Clinical diagnosis by laboratory Methods.	—Edited by Davidsohn & Henry Pub :—W.B. Saunder's Company (Asian Edition)
D. Pathology	
(i) Muir's Text Book of Pathology	—Anderson J.R. Pub :—Chappell D.P.
(ii) Pathologic basis of Diseases.	—Robbins S.L. Pub :—W.S. Saunders, Philadelphia.
(iii) Pathology.	—Anderson WAD Pub :—Mosby.

E. Hematology

- (i) Clinical Haematology —G.C. de Gruchy.
in Medical Practice. Pub :—ELBS & Blackwel-11. ✓
- (ii) Disorders of the Blood. —R.B. Thompson.
A text book of Clinical Pub :—Churchill & Livingstone.
Haematology.
-

MINUTES OF THE MEETING OF THE MEDICAL
EDUCATION AND RESEARCH COMMITTEE IN
PHARMACOLOGY HELD ON 19TH MARCH
1983, AT 12.00 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT, UNI-
VERSITY CAMPUS, JAIPUR.

Present :

1. Dr. F.S.K. Barar (Convener)
2. Dr. N.K. Khanna
3. Dr. S.K. Sharma

1. Under clause (4) of the Statute 42-E of the University Hand Book Pt. II, the Committee appointed Dr. F.S.K. Barar, Prof. and Head of the Department of Pharmacology, S.M.S. Medical College, Jaipur, as Convener of the Medical Education and Research Committee in Pharmacology for a term of three years.

2. The Committee scrutinised the Statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of Under-graduate, Post-graduate and Diploma Examinations in the subject, and revised the panel accordingly.

3. The Committee recommended courses of study and text-books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any, as follows :

I. Second M.B.B.S. Examination, May, 1986

(The page numbers referred to are of Syllabus 1980) :

Page 7

2. Pharmacology :—

Para 2 : (to be added) in the ward. A minimum of 5 Group discussions in clinical Pharmacology should be conducted in collaboration with the

Departments of Clinical Medicine and Paediatric Medicine.

Para 3 : (to be added) by students. Similarly Pharmacy Practicals by students shall also be held.

Page 8/9 :

1. Medicine :

(f) A minimum of 5 group discussions in clinical pharmacology may be held.

Page 14 :

Discussion : The pattern of Examination in Pharmacology (II MBBS) was discussed at length as contained in the Syllabus 1980 on page 14. It was unanimously agreed and resolved to recommend that the scheme of examination may be replaced by the scheme as followed by the University of Delhi. This Scheme is operative in the said University w.e.f. 25-2-82. It is evident that the MCI Examination scheme is only the prescribed minimum, and is not mandatory. Thus. the suggested scheme of Examination is as under :

PATTERN OF EXAMINATION

Theory :

Two written papers	65 marks each
Internal assessment	30 marks
Oral	40 marks
	<hr/>
Total	200 marks
	<hr/>

Practical :

Pharmacy Practical	20 marks
Drug Interactions	10 marks
Prescription writing	10 marks
Exptl. Pharmacology Pract.	25 marks
Clinical Pharmacology	20 marks
(Problem solving exercise)	
Internal assessment	15 marks
	<hr/>
Total	100 marks
	<hr/>

Pass percentage 50% separately in : .

- (i) Theory including Oral and Internal assessment.
- (ii) Practical and Internal Assessment.

Substitute :—Paper I for Section A
Paper II for Section B.

Notes :—

- (i) Delete
- (ii) Shall be modified as under :
instead of Section A insert Paper I
(in first line), and instead of Section B (2nd line) insert
Paper II.

Page 18—Internal Assessment :

The following changes shall have to be made :

Regular periodical examination shall be of 30 Marks
instead of 20 at present.

Day-to-day record shall be 15 instead of 10 at present.

Page 55—Final M.B.B.S. Examination :

- (d) Clinical posting. A minimum of 5 group discussion
in clinical pharmacology conducted in collaboration
with the Department of Clinical Medicine and
Paediatric Medicine preferably in the IX Semester.

II. *M.D. Examination December, 1984.* No Change.

III. *M.Sc. (Med.) Examination December, 1984.*

No Change except the following.

Page 22—O.278-F.

I. *Eligibility for Admission*

6th line

delete the phrase 'B.Sc. in the first attempt with
not less than 60% marks'.

Re-write-while a candidate with M.Pharm/B.V.Sc.
& A.H. B.D.S./B.Sc. (Med.)/B.Pharm. shall be
eligible for M.Sc. (Med.) Pharmacology.

III. Training (Para 1 and 2) the following observations were made :—

that since a candidate is appearing for Part-I examination of M.Sc. (Med.) after 18 months of registration, and for Part-II after a regular course of study of 2 years, the 3 years interval in the second line of para 1, be substituted with $3\frac{1}{2}$ years.

IV. *Diploma in Pharmacy Examination 1984.*

No Change.

4. The Committee considered and approved the plan of thesis of the following candidates who have applied for registration of the subject of their thesis noted against each :—

S.No. 1	Name of Candidate 2	Subject of Plan 3
------------	------------------------	----------------------

M.D. Pharmacology

1. Dr. (Mrs.) Kalpana Baijal : "A study of some antiarrhythmic drugs in experimentally induced arrhythmias in Animals with special reference to sodium, potassium and calcium contents of the perfusate."
 2. Dr. (Mrs.) Bina Shukla : "Antiarrhythmic, local anaesthetic and anticonvulsant activity of two new Beta-Adrenoceptor Blocking Agents, nadolol and metoprolol."
 3. Dr. (Mrs.) Savitri Godhwani : "Phytochemical and Pharmacological Investigations of *Ocimum sanctum* Linn (Tulsi). An experimental study of an indigenous herb."
-

1	2	3
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M.Sc. (Med.) Pharmacology :

4. Dr. Reenu Saxena : "Role of dopaminergic system in histamine stimulated gastric acid secretion in dog; and gastric mucus and stress induced gastric ulcers in albino rate".
-

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener. .

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN FORENSIC MEDICINE HELD ON 19TH MARCH, 1983 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. B.P. Gupta (Convener)
2. Dr. B.L. Asawa
3. Dr. P. Dayal
4. Dr. M.R. Goel

1. Under clause (4) of Statute 42-E of the University Handbook Pt. II The Committee *appointed* Dr. B.P. Gupta, Reader and Head of the Department of Forensic Medicine, R.N.T. Medical College, Udaipur as Convener of the Medical Education and Research Committee in Forensic Medicine for a term of three years.

2. The Committee referred to its earlier minutes dated 3rd Dec., 1981 and noted that inspite of clear recommendations to the effect that the qualifications and experience of the persons working in the other Universities in the subject of Forensic Medicine be obtained and placed before the M.E.R.C. at its next meeting. No such information has been supplied in this regard. In the absence of which this committee is not in a position to recommend the names of external examiners. However, the present list of examiners be continued till the next examination of 1983.

3. The Committee recommended course of study and text Books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations, Ordinances and Statutes, if any :

I. Second M.B.B.S Examinations, May, 1986.

NO CHANGE

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN BIO CHEMISTRY HELD ON 19TH MARCH, 1983,
AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS,
JAIPUR.

Present :

1. Dr. S.D. Bhardwaj (Convener)
2. Dr. P.P. Singh.

1. Under clause (4) of Statute 42-E of the University Hand Book Pt. II, the committee *appointed* Dr. S.D. Bhardwaj, Prof. and Head of the Department of Bio-Chemistry, S.M.S. Medical College, Jaipur as Convener of the Medical Education and Research Committee in Bio-Chemistry for a term of three years.

2. The Committee scrutinised the statements of qualifications and teaching experience of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners of under-graduate, Post-graduate Examinations in the subject and revised the panel accordingly.

3. The Committee recommended course of study and textbooks in the subject for the following examinations together with the relevant additions and/or alterations to the regulations and Ordinances and Statutes :

I. First M.B.B.S. Examination December, 1984.

NO CHANGE

II. M.D. Examination, December, 1984.

NO CHANGE

III. M.Sc. (Med) Examination. December, 1984.

NO CHANGE

However, the Committee resolved to recommend that Prof. S.D. Bhardwaj will Collect syllabi of M Sc. (Med.) Bio-Chemistry from different Universities. He will compare them and then will submit suggestion/recommendation for suitable change in our University M.Sc. (Med.) Chemistry syllabus. The recommendations, if any, may be submitted to Board of Studies directly.

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener
-

दिनांक 24 सितम्बर, 1983 को अपराह्न 1 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न साहित्य नामान्य संस्कृत, पाली प्राकृत और भाषा विज्ञान अध्ययन मण्डल की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. श्री गजानन मिश्र, (संयोजक)
2. श्री जगदीश शर्मा
3. श्री मोती लाल जोशी
4. श्री कलाज चतुर्वेदी
5. श्री नरोत्तम चतुर्वेदी
6. श्री माणिक्य लाल शास्त्री

1. विश्वविद्यालय के परिनियम संख्या 126 (बी) के अन्तर्गत श्री गजानन मिश्र, प्राचार्य, विरला आचार्य संस्कृत महाविद्यालय, पिलानी को सर्वसम्मति से अध्ययन मण्डल का संयोजक नियुक्त किया गया ।

2. विश्वविद्यालय की अविनियम की धारा 34 (4) (iv) के अन्तर्गत श्री मोती लाल जोशी, सदस्य अध्ययन मण्डल, प्रोफेसर, साहित्य, महाराज आचार्य संस्कृत कालेज, जयपुर को 1984 की संस्कृत परीक्षाओं के अध्ययन मण्डल से सम्बन्धित विषयों के लिये परीक्षक चयन समिति पर संयोजक के प्रतिरिक्त एक सदस्य के रूप में निर्वाचित किया गया ।

3. सन् 1983 में सम्पन्न संस्कृत अध्ययन संकाय की विभिन्न परीक्षाओं के प्रश्न-पत्रों एवं परीक्षकों के प्रतिवेदनों पर विषय सामग्री के अभाव में टिप्पणी नहीं दी जा सकी ।

4. विश्वविद्यालय हैण्डबुक पार्ट II के परिनियम 25 के क्लॉज 2 (ए) के प्रावधान के अन्तर्गत सम्बन्ध विभागों एवं महाविद्यालयों से प्राप्त अध्यापकों की वैकल्पिक योग्यता व अनुभव सम्बन्धी तालिका की जांच सम्बन्धित विषय सामग्री के अभाव में नहीं की जा सकी ।

5. (क) स्नातक परीक्षा शास्त्री, डि०ट०पा०, प्रथम एवं तृतीय वर्ष 1986 के लिए प्रस्तावित पाठ्यक्रम के सम्बन्ध में निर्णय लिया गया कि :—

- (i) संस्कृत संकाय से सम्बन्धित तीनों अध्ययन मण्डलों की संयुक्त बैठक दिनांक 24-9-83 के निश्चय सं० 8 पर गठित उप-समिति इस विषय पर विचार करे।

स्नातकोत्तर परीक्षाएँ आचार्य प्रथम (खण्ड) परीक्षा, 1986 एवं आचार्य द्वितीय (खण्ड) परीक्षा, 1987 का पाठ्यक्रम यथावत स्वीकृत किया गया।

- (ii) अकादमी परिषद की बैठक दिनांक 24 व 25 मई, 1983 के निश्चय सं० 26 तथा सिण्डिकेट दिनांक 3-4 जून, 1983 के निश्चय सं० 3 के परिप्रेक्ष्य में संस्कृत संकाय से सम्बन्धित तीनों अध्ययन मण्डलों की संयुक्त बैठक में पर्याप्त विचार विमर्श के उपरान्त अनुशंसार्थ निर्णय लिया गया कि द्वितीय वर्ष शास्त्री की महाविद्यालयी परीक्षा का आयोजन तथा तृतीय वर्ष परीक्षा के साथ द्वितीय वर्ष परीक्षा के पाठ्यक्रम की भी विश्वविद्यालयी परीक्षा का आयोजन सम्बन्धी निर्णय पर पुनर्विचार कर अनुरोध करता है। क्योंकि ऐसी आयोजना से छात्रों पर अनावश्यक भार पड़ता है। जो अव्यावहारिक एवं अमनो-वैज्ञानिक है। अतः विश्वविद्यालय ही यथावत द्वितीय वर्ष की परीक्षा आयोजित करे। फिर भी यदि विश्वविद्यालय अपने पूर्व निर्णय पर ही दृढ़ रहता है तो उस संदर्भ में प्रस्ताव है कि द्वितीय वर्ष परीक्षा, 1985 एवं तृतीय वर्ष परीक्षा, 1986 में की परीक्षा योजना एवं प्रश्न पत्र भार में कोई परिवर्तन/परिवर्द्धन आवश्यक नहीं है। द्वितीय वर्ष के पाठ्यक्रम एवं प्रश्न पत्रों को तृतीय वर्ष परीक्षा के साथ यथावत परीक्षा आयोजित कर ली जावे।

6. शास्त्री : त्रि०उ०पा० : प्रथम वर्ष परीक्षा, 1986 के पाठ्यक्रम में संस्कृत अध्ययन संकाय की बैठक दिनांक 8 जून, 1983 के निश्चय संख्या 4 द्वारा लिये गये निर्णय संख्या (1) कि “पूर्व-आयुर्वेद विज्ञान” विषय को शास्त्री प्रथम वर्ष परीक्षा, 1986 से पाठ्यक्रम में सम्मिलित कर लिया जावे” के अनुसार शास्त्री प्रथम वर्ष परीक्षा योजना के वर्ग अनिवार्य विषयों में क्रम संख्या 2 के विषय ‘सामान्य हिन्दी’ के अथवा में “पूर्व-आयुर्वेद विज्ञान” विषय का समावेश कर दिया जावे तथा उसे निम्नानुसार परिशोधित रूप में पाठ्यनियमावली में तथा स्थान अंकित किया जावे :—

वर्ग (1) अनिवार्य विषय :

1. सामान्य संस्कृत

2. सामान्य हिन्दी

अथवा

पूर्व आयुर्वेद विज्ञान

3. सामान्य अंग्रेजी

उक्त विषय का पाठ्यक्रम निम्नानुसार निर्धारित किया जाय 'आयुर्वेद-इतिहासः परिचयश्च' एक पत्र, 3 घण्टे, 100 पूर्णांक, 36 न्यूनतम उत्तीर्णांक।

7. संस्कृत अध्ययन संकाय की बैठक दिनांक 8 जून, 1983 के निश्चय संख्या 6, के संदर्भ में संस्कृत अध्ययन संकाय में चालू की जाने वाली (एम० फिल०) महोपाध्याय : परीक्षा का पाठ्यक्रम बनाये जाने हेतु एक उपसमिति का गठन किया गया जिसमें निम्नलिखित महानुभाव होंगे :—

1. श्री गजानन मिश्र : संयोजक : प्राचार्य, विरला आचार्य संस्कृत महाविद्यालय, पिलानी।
2. श्री जगदीश शर्मा, वेद विद्यालय, वनस्यली विद्यापीठ, वनस्यली।
3. श्री वैलाज चतुर्वेदी, प्राचार्य महाराणा आचार्य संस्कृत महाविद्यालय, उदयपुर।
4. श्री मोती लाल जोशी, प्रोफेसर साहित्य, महाराज संस्कृत कालेज जयपुर।

8. संस्कृत अध्ययन संकाय की बैठक दिनांक 8 जून, 1983 के निश्चय संख्या 7 के अनुसार त्रिवर्षीय शास्त्री की नई परीक्षा योजना पर विचार विमर्श करने हेतु गठित समिति की सम्पन्न बैठक दिनांक 14.9.82 की मंस्तुतियों पर सांगोपांग विचारोपरान्त निश्चय किया गया कि संस्कृत संकाय ने सम्बन्धित तीनों अध्ययन मण्डलों की संयुक्त बैठक दिनांक 24.9.83 के निश्चय संख्या 8 पर गठित समिति इस विषय पर पुनः विचार कर प्रभावी निर्णय ले।

9. श्री कन्हैया लाल शर्मा, प्राचार्य, प्राच्य विद्यापीठ, जयपुर का प्रस्ताव नये प्रस्तावित पाठ्यक्रम से सम्बन्धित है अतः इन पर भी निश्चय संख्या 8 में वर्णित उप-समिति ही विचार करे।

10. स्वतंत्रता आन्दोलन में किये गये त्याग के इतिहास को पाठ्यक्रम में सम्मिलित करने के लिये विश्वविद्यालय अनुदान आयोग द्वारा प्राप्त पत्रानुसार विचार किया गया कि निश्चय संख्या 8 पर वर्णित समिति को नये पाठ्यक्रम में समायोजनार्थ इस विन्दु को प्रस्तुत कर दिया जाय । "

11. विभिन्न अध्ययन मण्डलों के लिये विश्वविद्यालय अनुदान आयोग के मार्ग दर्शन एवं परिशोधित नीति निर्देशक सिद्धान्तों को विन्दु सं० 8 की समिति को आवश्यक कार्यवाही हेतु प्रस्तुत कर दिया जाय ।

ह०/—

गजानन मिश्र

संयोजक

दिनांक 24 सितम्बर, 1983 को अपराह्न 1 बजे सम्पन्न वेद, पौरोहित्य पुराणेतिहास, धर्मशास्त्र, ज्योतिष अध्ययन मण्डल के उपनिवेश की बैठक का कार्यवाही विवरण ।

उपस्थिति :

1. श्री रामजी लाल शास्त्री (संयोजक)
2. श्री राधाकृष्ण शास्त्री
3. श्री श्यामानन्दन मिश्र
4. श्री रामपाल शर्मा
5. श्री राजेन्द्र प्रसाद शर्मा

1. विश्वविद्यालय के परिचय 126 (बी) के निम्नलिखित प्रावधानों के अन्तर्गत अध्ययन मण्डल के सर्व सम्मति से श्री रामजी लाल शास्त्री, प्राचार्य, राजस्थान संस्कृत कालेज, जयपुर को आगामी तीन वर्ष की कालावधि के लिए संयोजक नियुक्त किया ।

2. विश्वविद्यालय के अधिनियम की धारा 34 (4) (iv) के अन्तर्गत 1984 की संस्कृत अध्ययन संकायान्तर्गत परीक्षाओं के लिये परीक्षक चयन समिति पर संयोजक के प्रतिरिक्त मण्डल के एक सदस्य श्री रामपाल शर्मा प्रोफेसर, महाराज संस्कृत कालेज, जयपुर को सर्वसम्मति से एक वर्ष के लिए निर्वाचित किया ।

3. नव 1983 में सम्पन्न हुई संस्कृत अध्ययन संकाय की विभिन्न परीक्षाओं के प्रश्नपत्रों एवं परीक्षकों के प्रतिवेदनों पर अध्ययन मण्डल द्वारा प्रश्नपत्रों एवं परीक्षकों के प्रतिवेदनों के अभाव में टिप्पणी नहीं की जा सकी ।

4. अध्ययन मण्डल द्वारा कार्यवाही विवरण के इन निम्न बिन्दु पर कि विश्वविद्यालय की हैण्डबुक पार्ट द्वितीय के परिचय संख्या 25 के बलाज 2 (ए) के प्रावधानान्तर्गत विश्वविद्यालय विभागों, महाविद्यालयों, मन्दिर महाविद्यालयों संस्थाओं एवं अन्य विश्वविद्यालयों ने प्राप्त अध्यापकों की शैक्षणिक योग्यताएँ, अध्यापनानुभव सम्बन्धी स्टेटमेंट (तानिका) की जांच कर परीक्षकों सम्बन्धी पूर्ण विवरण (पूरा नाम, योग्यता, पता आदि) अर्जित कर परीक्षक तालिका का इस प्रकार ने निर्माण करना, जिसमें कि उनमें परीक्षकों की समुचित

संख्या उपलब्ध हो और तालिका से वहार के परीक्षकों को नियुक्त नहीं किया जावे, पर विचार विमर्श कर, निर्णय लिया गया कि विश्वविद्यालय द्वारा परीक्षक नाम-तालिका मेज पर नहीं रखने के कारण इस पर विचार करना सम्भव नहीं है। अतः सम्बन्धित विषयों के सदस्य महानुभाव अपने-अपने विषयक, की परीक्षक नामावली बना कर तीन सप्ताह के अन्दर संयोजक के पास प्रस्तुत कर देंगे। इस पर आवश्यक निर्णय हेतु अध्ययन मण्डल की अग्रिम बैठक नवम्बर मास के द्वितीय सप्ताह में आयोजित की जावे ऐसा निर्णय किया गया।

5. अध्ययन मण्डल ने प्रथम वर्ष शास्त्री परीक्षा, 1986 एवं अन्तिम वर्ष शास्त्री परीक्षा, 1986 की परीक्षाओं के लिये पाठ्यक्रम का निर्धारण करना एतद्दर्थ तत्सम्बन्धित अध्यादेशों/नियमों में आवश्यक परिवर्तन एवं परिवर्धन के सम्बन्ध में विचार विमर्श किया।

अध्ययन मण्डल ने निर्णय लिया कि शास्त्री प्रथम वर्ष परीक्षा, 1986, तृतीय वर्ष परीक्षा, 1986 तथा आचार्य प्रथम खण्ड परीक्षा, 1986 एवं आचार्य द्वितीय खण्ड परीक्षा, 1987 के पाठ्यक्रम में किसी भी प्रकार का संशोधन इस अध्ययन मण्डल की राय में अपेक्षित नहीं है।

प्रकादमी परिषद की बैठक दिनांक 24 व 25 मई, 1983 के निश्चय संख्या 26 तथा सिण्डिकेट दिनांक 3 व 4 जून, 1983 के निश्चय संख्या 3 के परिप्रेक्ष्य में संस्कृत संकाय से सम्बन्धित तीनों अध्ययन मण्डलों की संयुक्त बैठक में पर्याप्त विचार-विमर्श के उपरान्त अनुज्ञंसार्य निर्णय लिया गया कि द्वितीय वर्ष शास्त्री की महाविद्यालयीय परीक्षा की आयोजना तथा तृतीय वर्ष परीक्षा के साथ पुनः द्वितीय वर्ष परीक्षा के पाठ्यक्रम का भी विश्वविद्यालय की परीक्षा की आयोजना सम्बन्धी निर्णय पर पुनः विचार का अनुरोध करता है क्योंकि ऐसी आयोजना से छात्रों पर अनावश्यक भार पड़ता है, जो अव्यवहारिक एवं अमनोवैज्ञानिक है। अतः विश्वविद्यालय अपने निर्णय पर ही दृढ़ रहता है तो उस संदर्भ में हमारा प्रस्ताव है कि द्वितीय वर्ष परीक्षा, 1985 एवं तृतीय वर्ष परीक्षा, 1986 में की परीक्षा आयोजन एवं प्रश्न-भार में कोई परिवर्तन/परिवर्धन आवश्यक नहीं है। द्वितीय वर्ष के पाठ्यक्रम एवं प्रश्न पत्रों को तृतीय वर्ष परीक्षा के साथ बसावत परीक्षा आयोजित कर ली जावे।

6. संस्कृत अध्ययन संकाय की निश्चय संख्या 4 दिनांक 8 जून, 1983 के संदर्भ में शास्त्री प्रथम वर्ष परीक्षा में पूर्व-आयुर्वेद विज्ञान विषयक पाठ्यक्रम को किन प्रकार प्रभावी किया जाय, इन प्रश्न पर विचार विमर्श कर निर्णय लिया

गया कि उक्त विषय के लिये तीनों मण्डलों की संयुक्त बैठक में गठित समिति के प्रतिवेदन आने पर ही विचारणीय है।

7. संस्कृत अध्ययन संकाय की निश्चय संख्या 6 दिनांक 8 जून, 1983 के संदर्भ में एम० फिल० के पाठ्यक्रम की विस्तृत रूपरेखा एवं पाठ्यक्रम की संस्तुति करने हेतु विचार विमर्श कर निर्णय लिया गया कि उक्त विषय पर एक उप समिति गठित करके मण्डल की आगामी बैठक से यह उपसमिति एम० फिल० के पाठ्यक्रम को विषयानुसार तैयार करके प्रस्तुत करेगी। उपसमिति में निम्नलिखित महानुभाव सदस्य होंगे :—

1. श्री रामपाल जर्ना (ज्योतिष)
2. श्री राधाकृष्ण शास्त्री (वर्मशास्त्र)
3. श्री रामजी लाल शास्त्री (पुराणेतिहास)
4. श्री राजेन्द्र प्रसाद मिश्र (वेद-पौरोहित्य)

8. संस्कृत अध्ययन संकाय की निश्चय संख्या 7 दिनांक 8 जून, 1983 के संदर्भ में, संकाय की कि निश्चय संख्या 7 दिनांक 3 जून, 1982 के अन्तर्गत श्री नागेन्द्र प्रतिहस्त एवं श्री ओम प्रकाश पाराशर के पत्र दिनांक 3-12-80 में उल्लिखित शास्त्री की परीक्षा केवल वर्ग (III) में निर्धारित विषयों के सम्बन्ध में विस्तृत विचार विमर्श करने हेतु गठित समिति की सम्पन्न बैठक दिनांक 14 सितम्बर, 1982 की संस्तुतियों पर विचार विमर्श कर निर्णय लिया गया कि तीनों मण्डलों के संयुक्त अधिवेशन में पाठ्यक्रम संशोधन का गठित उप-समिति की अनुशंसा प्राप्त होने पर इस प्रस्ताव की भावना का स्वतः ही समाधान हो जायेगा। अतः इस पर पृथक से विचार करने की आवश्यकता नहीं रह गई है।

9. अध्ययन मण्डल ने संस्कृत अध्ययन संकाय की निश्चय संख्या 9 दिनांक 8 जून, 1983 के संदर्भ में, श्री कन्हैया लाल शर्मा, प्राचार्य प्राच्य विद्यापीठ शाहपुराबाग, जयपुर के निम्नलिखित प्रस्ताव पर विचार विमर्श किया :—

“शास्त्री परीक्षा में—मुख्य विषय “नव्य व्याकरण” “प्राचीन व्याकरण” तथा “साहित्य” में से एक विषय तथा अन्य वेदादि विषयों में से एक विषय लेने हेतु प्रावधान किया गया है। “सामान्य-मंस्कृत” पूर्णतः समाप्त हो गया है। ऐसी स्थिति में व्याकरण विषय वाले को सामान्य मंस्कृत के साहित्य विषय का ज्ञान नहीं होगा। साहित्य विषय वाले को व्याकरण का ज्ञान कुछ नहीं होगा। अतः मुख्य विषयों के साथ अनिवार्य मंस्कृत का जिसमें व्याकरण साहित्य विषयक ज्ञान का समावेश हो नके, ऐसा प्रावधान अपेक्षित है।”

अध्ययन मण्डल ने निर्णय लिया कि अध्ययन मण्डल की निश्चय संख्या 8 की संस्तुतियों का अवलोकन करें ।

10. संस्कृत अध्ययन संकाय की निश्चय संख्या 11 दिनांक 8 जून, 1983 के संदर्भ में, सचिव, विश्वविद्यालय अनुदान आयोग के पत्र क्रमांक फा-03-29/80 (सीपी) 11, दिनांक 9 मार्च, 1983 जो कि स्वतन्त्रता आन्दोलन में किये गये त्याग के इतिहास को पाठ्यक्रम में सम्मिलित करने के सम्बन्ध में है, पर विचार विमर्श किया कि अध्ययन मण्डल हार्दिक रूप से समादर करता हुआ अनुशंसा करता है कि सामान्य संस्कृत एवं अन्य उपयुक्त पाठ्यविषयों के सहायक ग्रन्थ के रूप में इसका समावेश किया जावे ।

अन्त में अध्यक्ष के प्रति धन्यवाद ज्ञापन के साथ उपवेदन की कार्यवाही समाप्त हुई ।

ह०/-

(रामजी लाल शास्त्री)

संयोजक

दिनांक 1 अक्टूबर, 1983 को मध्याह्न 12 बजे कुलपति सचिवालय, विश्वविद्यालय प्रंगण, जयपुर में सम्पन्न दर्शन एवं व्याकरण अध्ययन मण्डल की बैठक की कार्यवाही विवरण ।

उपस्थिति :

- 1—श्री चण्डीप्रसादाचार्य (संयोजक)
- 2—श्री विश्वनाथ मिश्र
- 3—श्री शीतल प्रसाद जैन
- 4—श्री शंकर प्रसाद शुक्ल
- 5—डा. पुष्कर दत्त शर्मा

(1) विश्वविद्यालय के परिनियम 126 (बी) के प्रावधानान्तर्गत अध्ययन मण्डल ने पं. चण्डीप्रसादाचार्य, प्राचार्य, महाराजा संस्कृत कालेज, जयपुर को सर्वसम्मति से दर्शन एवं व्याकरण से सम्बद्ध विषयों के लिए अध्ययन मण्डल का संयोजक 3 वर्ष की कालावधि के लिए नियुक्त किया ।

(2) विश्वविद्यालय के अविनियम की धारा 34 (4) (iv) के अन्तर्गत श्री विश्वनाथ मिश्र, प्राचार्य, राजकीय आचार्य मादूल संस्कृत कालेज, बीकानेर को 1984 की परीक्षाओं के अध्ययन मण्डल से सम्बद्ध विषय के लिये परीक्षक चयन समिति में संयोजक के प्रतिरिक्त एक समस्त के रूप में सर्व सम्मति से निर्वाचित किया गया ।

(3) नव् 1983 में सम्पन्न हुई संस्कृत अध्ययन संकाय की विभिन्न परीक्षाओं के प्रश्न-पत्रों एवं परीक्षकों के प्रतिवेदनों का अवलोकन करने के सम्बन्ध में अध्ययन मण्डल ने संस्तुति की कि परीक्षक तालिका तथा परीक्षक प्रतिवेदन प्राप्त न होने के कारण विचार स्पष्ट कर निरचय किया गया कि इन बिन्दु पर विचार हेतु शीघ्र ही पुनः बैठक बुलाई जाय ।

अध्ययन मण्डल ने निरचय किया कि जब तक उक्त बैठक पुनः नहीं हो जाती, तब तक परीक्षा समिति की बैठक नहीं होगी चाहिये ।

(4) अध्ययन मण्डल ने विश्वविद्यालय की हैण्ट बुक पाठ द्वितीय के परिनियम संख्या 25 के क्लॉज 2 (ए) के प्रावधानान्तर्गत विश्वविद्यालय विभागों,

महाविद्यालयों, सम्बद्ध महाविद्यालयों/संस्थाओं एवं अन्य विश्वविद्यालय से प्राप्त अध्यापकों की शैक्षणिक योग्यताएं, अध्यापनानुभव सम्बन्धी स्टेटमेंट (तालिका) की जांच कर पर शिक्षकों सम्बन्धी पूर्ण विवरण (पूरा नाम, योग्यता, पता आदि) अंकित कर परीक्षक तालिका का इस प्रकार से निर्माण करना, जिससे कि उसमें परीक्षकों की समुचित संख्या उपलब्ध हो और तालिका से बाहर के परीक्षकों को नियुक्त नहीं किया जावे पर विचार विमर्श सम्भव नहीं हो सका क्योंकि सम्बन्धित सामग्री उपलब्ध नहीं थी ।

5. शास्त्री प्रथम वर्ष, परीक्षा 1986 तथा तृतीय वर्ष, परीक्षा 1986 एवं आचार्य पूर्वार्द्ध परीक्षा 1986 एवं उत्तरार्द्ध परीक्षा 1987 के पाठ्यक्रम में संशोधन करके संशोधित सूची निम्न है :—

प्रथम वर्ष शास्त्री :

नव्य व्याकरण

प्रथम पत्र—(क) (सिद्धान्त कौमुदी) :

कारक प्रकरण से समासाश्रय त्रिविध पर्यन्त

कारक प्रकरण 30 अंक

समास प्रकरण 30 अंक

एकशेष प्रकरण से समासाश्रय तक 30 अंक

(ख) नन्दिकेज्वर काशिका 10 अंक

द्वितीय पत्र—(सिद्धान्त कौमुदी) :

(तद्धिताधिकार प्रकरण से द्विरुक्त प्रकरण तक)

तद्धिताधिकार से संपिक्त तक 30 अंक

विचारार्थ से पांचमिक तक 30 अंक

मत्वर्थीय 10 अंक

भावकमार्थ से स्वार्थिक तक 20 अंक

द्विरुक्त 10 अंक

द्वितीय वर्ष शास्त्री :

(नव्य व्याकरण)

प्रथम पत्र :—सिद्धान्त कौमुदी (न्वादिगण से घुरादि गणान्त)

न्वादिगण 30 अंक

अदादिगण 10 अंक

जृहोत्यादिगण 10 अंक

दिवादि से क्र्यादि तक	30 अंक
चुरादि प्रकरण	10 अंक
वातुओं के अर्थ का	10 अंक

द्वितीय पत्र :—

(म) परिभाषेन्दु शेखर (प्रथम तन्त्र)	70 अंक
(न) प्रौढ़ मनोरमा की त्रिसूत्री शब्दरत्न सहित	30 अंक
(i) स्थानिवदादेशो अनलविधौ	
(ii) अचः परस्मिन् पूर्वविधौ	
(iii) न पदान्त द्विवचन वरेयलोपस्वर सवर्णानुस्वारदीर्घ जश् चर विविधु ।	

तृतीय वर्ष शास्त्री :

(नव्य व्याकरण)

प्रथम पत्र :—(सिद्धान्त कौमुदी गण्यन्त प्रक्रिया से उत्तर कृदन्तान्त उणादि रहित)

प्यन्त से लकारार्थ तक	40 अंक
पुर्व कृदन्त	30 अंक
उत्तर कृदन्त	30 अंक

द्वितीय पत्र :—परिभाषेन्दु शेखर (द्वितीय तथा तृतीय तन्त्र)	100 अंक
द्वितीय तन्त्र	60 अंक
तृतीय तन्त्र	40 अंक

तृतीय पत्र :—वैयाकरण भूषण सार

(धात्वर्थ प्रकरण से नामार्थ तथा स्फोट प्रकरण)	80 अंक
धात्वर्थ से नामार्थ तक	20 अंक
स्फोट प्रकरण	

तृतीय वर्ष शास्त्री :

प्राच्य व्याकरण

प्रथम, द्वितीय पत्र तथा पूर्व

तृतीय पत्र :—

वैयाकरण भूषण सार	
(धात्वर्थ से नामार्थ प्रकरण तक)	100 अंक

आचार्य द्वितीय वर्ष :

व्याकरण

तृतीय पत्र :—नवाहिक महाभाष्य

100 अंक

प्राचीन व्याकरण

द्वितीय पत्र :—(क) महाभाष्य सप्तमाध्याय

40 अंक

(ख) परमलघुमजूपा

40 अंक

(ग) नन्दिकेश्वर कारिका

20 अंक

सामान्य दर्शन (शास्त्री प्रथम वर्ष)

प्रथम पत्रम् :—यथावत्

द्वितीय पत्रम् :—तन्त्र सिद्धान्त रत्नावली—म. म. चिन्ना स्वामी

100 अंक

अथवा

अर्थ संग्रह—लौगाक्षिभास्कर

100 अंक

सामान्य दर्शन—शास्त्री द्वितीय वर्ष :

प्रथम पत्रम् :—1—मुक्तावली अनुमान खण्ड

70 अंक

2—योग सूत्र समाधि एवं साधन पाद मात्र

30 अंक

विष्णु टीका

पूर्णाङ्क—100 अंक

द्वितीय पत्रम् :—1—वेदान्त सार—सदानन्द

50 अंक

2—पंचदशी—विद्यारण्य स्वामी

50 अंक

(चित्र दीपान्त)

सामान्य दर्शन—शास्त्री तृतीय वर्ष :

प्रथम पत्रम्—सर्व दर्शन संग्रह—मध्वाचार्य

पूर्णाङ्क 100 अंक

(चार्वाक, जैन, बौद्ध, वैशेषिक, रामानुज एवं प्रत्याभिज्ञा दर्शन)

द्वितीय पत्रम्—यथावत्

पूर्णाङ्क 100 अंक

तृतीय पत्रम्—शास्त्रकर्म में निर्धारित ग्रन्थों के आधार पर निम्नलिखित विषयों का विशेष एवं तुलनात्मक अध्ययन ।

(क) (i) आत्मा ईश्वर एवं मोक्ष

40 अंक

(ii) तार्थ—कारण सिद्धान्त प्रमाण—

मीमांसा एवं तत्त्व मीमांसा—

40 अंक

(ख) पश्चिमी दर्शन—उत्पत्ति एवं विकास का संक्षिप्त परिचय—लेखक अथवा अस्तित्ववाद :—ले. डा. महावीर दावीच	20 अंक 20 अंक
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दर्शनाचार्य—प्रथम खण्ड—प्रयावत

दर्शनाचार्य—द्वितीय खण्ड—तृतीय पत्रम् सिद्धिद्वयम् (अग्निदायं) यामुनाचार्य 1—दुद्धाद्वैत नारतण्ड— 2—प्रस्थान भेद अथवा 1—प्रमाण परीक्षा प्रयमाहिक 2—प्रमाण वार्तिक—प्रथम प्रकरण	पूर्णाङ्क 100 अंक 50 अंक 35 अंक 15 अंक 25 अंक 25 अंक
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जैन दर्शन—शास्त्री—तृतीय वर्ष :

प्रथम पत्र—पूर्ववत	पूर्णाङ्क—100 अंक
द्वितीय पत्र—कर्म प्रकृति (सं. डा. गोकुल चन्द्र जैन) रत्नकरन्द्रक आचकाचार—सं. डा. पद्मा लाल साहित्याचार्य	40 अंक 60 अंक
तृतीय पत्र—प्रमेय रत्नमाला (भा. अनन्तवीर्यं) आचार्य—प्रथम खण्ड आचार्य—द्वितीय खण्ड द्वितीय पत्र—पूर्ववत तृतीय पत्र—अष्ट महती	100 अंक पूर्ववत पूर्ववत 100 अंक

(6) संस्कृत अध्ययन संकाय की निम्नलिखित संख्या 4, दिनांक 8 जून, 1983 के संदर्भ में शास्त्री प्रथम वर्ष में 'पूर्व-आयुर्वेद' विषय को प्रमावी बनाने के लिये 24 सितम्बर, 1983 को सभी अध्ययन मण्डलों की संयुक्त बैठक में एक विशेष समिति गठित की गई है। उसकी संमति प्रतीक्षित है। इसलिये उक्त विस्तु पर विचार स्थगित रखा गया।

(7) अध्ययन मण्डल ने संस्कृत अध्ययन संकाय की निम्नलिखित संख्या 6 दिनांक 8 जून, 1983 के संदर्भ में एन. टिल. के पाठ्यक्रम की विस्तृत परीक्षा एवं पाठ्यक्रम की संमति करने हेतु विचार विमर्श किया।

अध्ययन मण्डल ने व्याकरण विषय में एम. फिल. (महोपाध्याय) पाठ्यक्रम की विस्तृत त्परेखा एवं पाठ्यक्रम निर्मित कर संस्तुत किया (परिगिष्ट-I)

(8) अध्ययन मण्डल ने संस्कृत अध्ययन संकाय की निश्चय संख्या 7, दिनांक 8 जून, 1983 के संदर्भ में संकाय की निश्चय संख्या 7 दिनांक 3 जून, 1982 के अन्तर्गत श्री नागेन्द्र प्रतिहस्त एव श्री ओम प्रकाश पाराशर के पत्र दिनांक 3-12-80 में उल्लिखित शास्त्री की परीक्षा केवल वर्ग (III) में निर्धारित विषयों के सम्बन्ध में विस्तृत विचार विमर्श करने हेतु गठित समिति की सम्पन्न बैठक दिनांक 14 सितम्बर, 1982 की संस्तुतियों पर विचार विमर्श किया।

अध्ययन मण्डल ने संस्तुति की कि अभी तक संयोजक को इस तरह का निर्देश या प्रविकार नहीं मिला है। अतः संस्तुति के अनुसार परीक्षा योजना बनाना अथवा तदनुकूल पाठ्यक्रम तैयार करना संभव नहीं है।

(9) अध्ययन मण्डल ने संस्कृत अध्ययन संकाय की निश्चय संख्या 9 दिनांक 8 जून, 1983 के संदर्भ में श्री कन्हैया लाल शर्मा, प्राचार्य, प्राच्य विद्यापीठ शाहपुरा बाग, जयपुर के निम्नलिखित प्रस्ताव पर विचार विमर्श किया।

“शास्त्री परीक्षा में मुख्य विषय नव्य व्याकरण, प्राचीन व्याकरण तथा साहित्य में से एक विषय तथा अन्य वेदादि विषयों में से एक विषय लेने हेतु प्रावधान किया गया है। सामान्य मस्कृत पूर्णतः नमाप्त हो गया है। ऐसी स्थिति में व्याकरण विषय लेने वाले को सामान्य संस्कृत के साहित्य विषय का ज्ञान नहीं होगा। साहित्य मुख्य विषय वाले को विषयों के साथ अनिवार्य संस्कृत का जिसमें व्याकरण साहित्य विषयक ज्ञान का समावेश हो सके ऐसा प्रावधान अपेक्षित है।”

(10) अध्ययन मण्डल ने संस्कृत अध्ययन संकाय की निश्चय संख्या 11, दिनांक 8 जून, 1983 के संदर्भ में सचिव, विश्वविद्यालय अनुदान आयोग के पत्र क्रमांक फा-3-29/80 (सी.पी.) 11, दिनांक 9 मार्च, 1983 जो कि स्वतन्त्रता आन्दोलन में किये गये त्याग के इतिहास को पाठ्यक्रम में सम्मिलित करने के सम्बन्ध में है पर विचार विमर्श किया।

अध्ययन मण्डल ने संस्तुति की कि उक्त विषय पर अध्ययन मण्डल की प्राणामी बैठक जो कि निर्णय संख्या 3 के अन्तर्गत विश्वविद्यालय की सद्विद्यों

के बाद होती है, में भारतीय स्वतन्त्रता आन्दोलन के इतिहास को पाठ्यक्रम में सम्मिलित कर तदनुकूल पाठ्यक्रम तैयार करने पर विचार किया जाय। एतदर्थ डा० सुन्दर दत्त वर्मा मुन्ताव तैयार करके लावे।

(11) विद्वद्विद्यालय अनुदान आयोग के सभी मुन्ताव परीक्षाओं में सयोग-नादि के लिए प्रमत्तनीय हैं और उन्हें क्रियान्वित किया जाना चाहिये। अध्ययन मण्डल इनमें पूर्ण सहमत है।

अन्त में सयोजक महोदय के बख्शवाद प्रस्ताव के पारित होने पर सभा विभक्तित हुई।

हृ०/-

ब्रजदीप्रसादाचार्य

संयोजक

(परिशिष्ट—1)

(मन्दर्भ : कार्यवाही विवरण निश्चय संख्या—7)

महोपाध्याय परीक्षा में प्रवेश के लिये सामान्य नियम

1. विश्वविद्यालय की परीक्षाओं में नामांकन व अनुशासन सहित छात्रों के प्रवेश हेतु परिनियम व अध्यादेश आदि तथा महाविद्यालयों की मान्यता हेतु स्वास्थ्य व आवास आदि के सभी नियम परिनियम महोपाध्याय पाठ्यक्रम व परीक्षा स्तर पर भी लागू होंगे। जब तक कि निम्न प्रकार से उनको अन्य रूप में परिभाषित न किया जाय।

2. महोपाध्याय कक्षा में प्रवेश चाहने वाले छात्र को किसी भी विश्व-विद्यालय या मान्यता प्राप्त संस्थान से न्यूनतम 55 प्रतिशत अंकों के साथ आचार्य परीक्षा उत्तीर्ण होना आवश्यक है। छात्र द्वारा महोपाध्याय उपाधि के लिये चाहे गये विषय में उसे द्वितीय श्रेणी आचार्य के साथ उसी विषय में न्यूनतम द्वितीय श्रेणी में शास्त्री उत्तीर्ण होना भी आवश्यक होगा। विशेष परिस्थितियों में आचार्य में 55 प्रतिशत से कम अंक होने पर परन्तु शास्त्री में द्वितीय श्रेणी वाले छात्र को विभागाध्यक्ष या संस्था प्रधान द्वारा अभिरक्षित करने पर महोपाध्याय परीक्षा में प्रवेश की स्वीकृति दी जा सकती है। इन परीक्षा का प्रावधान नियमित छात्रों के लिये ही है।

3. महोपाध्याय उपाधि की अवधि एक शैक्षणिक सत्र होगी। प्रस्तावित पाठ्यक्रमों के अनुसार यह परीक्षा कुछ लिखित, कुछ मौखिक व कुछ प्रायोगिक रूप से ली जावेगी जैसा कि सिण्डीकेट की अभियंसा पर समय-ममय पर मीनेट निश्चय करेगी। पाठ्यक्रम को पढ़ाने वाले अध्यापक तथा शोध छात्रों से सम्बन्धित पर्यवेक्षक ही पाठ्यांश या पूरे पाठ्यक्रम के परीक्षक होंगे। उन अध्यापकों या पर्यवेक्षकों के नाम विभागाध्यक्ष या पर्यवेक्षक ही उनसे संबन्धित विषयों को सूचना के साथ मन् आरम्भ के एक महीने के अन्तर्गत कुलसचिव को भेज देंगे। महोपाध्याय के छात्रों का निरन्तर मूल्यांकन होता रहेगा। मूल्यांकन की विधि व स्तर कुलपति द्वारा नियुक्त समिति की अभियंसा पर निश्चित होगी। जिसमें संबंधित छात्रों को भी अवगत कराया जायगा। वार्षिक परीक्षा शैक्षणिक सत्र के अन्त में विश्वविद्यालय द्वारा घोषित तिथियों में होगी। परीक्षा संस्थान प्रधानों द्वारा ही ली जावेगी। प्रश्न पत्रों का नियमन कुलपति द्वारा नियुक्त नियमन समिति द्वारा ही होगा।

4. यदि कोई छात्र एक शैक्षणिक सत्र तक विश्वविद्यालय या विश्व-विद्यालय से सम्बन्ध महाविद्यालय में अध्ययनरत हो तथा सम्बन्धित विभागाध्यक्ष

यह प्रमाणित कर देता है कि छात्र ने अपेक्षित अध्ययन व योग्यता प्राप्त कर ली है तो उसे वार्षिक परीक्षा में प्रविष्ट होने के योग्य समझा जायेगा ।

5. महोपाध्याय के लिये पंजीकृत छात्र की प्रत्येक पत्र में कक्षा में दिये गये कुल व्याख्यानों, गोष्टियों या प्रायोगिकों में 66 प्रतिशत उपस्थिति अनिवार्य है । इस तथ्य को प्रमाणित करता हुआ विभागाध्यक्ष का प्रमाण-पत्र परीक्षा में आरम्भ होने से 21 दिन पूर्व कुलसचिव को देना होगा ।

6. महोपाध्याय परीक्षा में प्रवेश चाहने वाले प्रत्येक छात्र को विश्व-विद्यालय द्वारा नियम आवेदन-पत्र भर रु. 75/- निर्धारित शुल्क और 2/- रु. अंक तालिका शुल्क तथा विभागाध्यक्ष के चरित्र-प्रमाण पत्र व प्रवेश की अर्हता के प्रमाण-पत्र के साथ प्रति वर्ष 10 नवम्बर तक विश्वविद्यालय को भेजना होगा । 10/- रु. विलम्ब शुल्क के साथ 20 नवम्बर तक भी आवेदन पत्र लिया जा सकेगा ।

7. महोपाध्याय परीक्षा में लिखित, मौखिक या प्रायोगिक परीक्षाओं में से किसी भी एक पत्र में अनुत्तीर्ण रहने पर छात्र को अगले सत्र की वार्षिक परीक्षा के समय उस पत्र को पुनः परीक्षा देने का एक अवसर और दिया जा सकेगा ।

8. महोपाध्याय उपाधि के लिये जमा कराया गया किसी भी प्रकार का शुल्क किसी भी परिस्थिति में न तो वापिस किया जावेगा और न ही अग्रिम परीक्षा के लिए मुरसित हो सकेगा ।

9. महोपाध्याय परीक्षा में लघु-जोय प्रबन्ध का माध्यम केवल संस्कृत होगा ।

10. महोपाध्याय कक्षा में अध्ययन करने के लिये छात्र को नद्वंद्वित महा-विद्यालय द्वारा निर्धारित शुल्क या विश्वविद्यालय नियम के अनुसार 250/- रु. शुल्क देना होगा । अन्य सभी शुल्क विश्वविद्यालय द्वारा निर्धारित नियमों के अनुसार देय होंगे ।

नोट :—यद्यपि महोपाध्याय का पाठ्यक्रम एक ही संज्ञाश्रित सत्र या होगा लेकिन छात्र उसे दो वर्ष में पूरा कर सकता है । परन्तु दो वर्ष नभ्य अनुत्तीर्ण रहने वाले छात्र को किसी भी प्रकार तीसरा अवसर नहीं मिलेगा ।

11. महोपाध्याय की कक्षाओं के अध्ययन के लिये प्रति प्रश्न-पत्र 6 कालांश अथवा 4 घण्टे निर्धारित रहेंगे। शोध प्रबन्ध निदेशक के लिए प्रति सप्ताह प्रति छात्र 1 घण्टा निर्धारित होगा।

12. मूल्यतः महोपाध्याय परीक्षा के छात्रों की परीक्षा लघु शोध के साथ पाठ्यक्रम के तीन पत्रों में ली जायेगी।

13. महोपाध्याय परीक्षा में छात्र आन्तरिक और बाह्य दोनों प्रकार से परीक्षित होंगे। प्रत्येक प्रश्न-पत्र जो 100 अंकों का होगा वह बाह्य व आन्तरिक मूल्यांकन के लिये सम-विभक्त रहेगा। परीक्षा उत्तीर्ण होने के लिये छात्र को बाह्य और आन्तरिक मूल्यांकन में पृथक-पृथक 40 प्रतिशत अंक प्राप्त करने अनिवार्य हैं। लेकिन उत्तीर्ण होने के लिये सभी पत्रों का कुल योग 50 प्रतिशत होना आवश्यक है। छात्र को श्रेणी लाभ उसके द्वारा प्राप्त बाह्य व आन्तरिक मूल्यांकन सहित सभी प्रश्न-पत्रों के कुल योग के आधार पर होगा। परन्तु अंकतालिका में छात्र द्वारा प्राप्त बाह्य व आन्तरिक मूल्यांकन के अंक पृथक ही दिखाये जायेंगे।

उत्तीर्ण छात्रों का श्रेणी विभाजन निम्न प्रकार होगा :—

75 प्रतिशत या इससे अधिक प्राप्तांकों पर विशेष योग्यता सहित प्रथम श्रेणी, 65 प्रतिशत या इससे अधिक 75 प्रतिशत अंक प्राप्त करने पर प्रथम श्रेणी, 50 प्रतिशत या इससे अधिक 64 प्रतिशत अंक प्राप्त करने पर द्वितीय श्रेणी। लघु-शोध प्रबन्ध छात्रों को सामान्यतः वार्षिक परीक्षा आरम्भ होने से पूर्व टंकित प्रतियाँ में प्रस्तुत करना होगा जिसमें एक प्रति संस्था के पुस्तकालय में रखी जायेगी। लेकिन किन्हीं विशेष कारणों से समय पर न प्रस्तुत करने पर विभागाध्यक्षों पर्यवेक्षकों का विशेष अनुमति पर उस सत्रान्त तक भी प्रस्तुत किया जा सकेगा। लघु-शोध पर मौखिक परीक्षा लघु शोध प्रबन्ध प्रस्तुत कर देने के बाद पर्यवेक्षक या विभागाध्यक्षों द्वारा नियत तिथि पर नुविमानुसार ली जा सकती है।

14. महोपाध्याय कक्षा को विश्वविद्यालय के प्रोफेसर और गीडर ही अध्यापन करावेगे। लेकिन सम्बद्ध महाविद्यालयों के वे प्राध्यापक जो विद्या-वारिधि या पीएच.डी. प्राप्त हैं तथा जिन्हें स्नातकोत्तर कक्षाओं को पढ़ाने का कम से कम पांच वर्षों का अनुभव हो नाथ ही वे भी महोपाध्याय कक्षाओं को पढ़ाने योग्य मनाने जायेंगे जिन्हें 10 वर्षों का तद्विषयक स्नातकोत्तर कक्षाओं का अध्यापन अनुभव प्राप्त हो।

15. महोपाध्याय कक्षा विश्वविद्यालय के विभाग या सम्बद्ध स्नातकोत्तर महाविद्यालय की सामान्य पूर्वानुमति पर आरम्भ हो सकेगी। उन्हीं सम्बद्ध स्नातकोत्तर महाविद्यालयों को महोपाध्याय कक्षा आरम्भ करने की स्वीकृति होगी, जो निम्न अनुबन्धों को पूरा करते हों :—

- (अ) महाविद्यालय में स्नातकोत्तर कक्षाएं कम से कम पांच वर्ष से चलती हों।
- (ब) उहां अनुसंधान पर्यवेक्षक उपलब्ध हों।
- (न) सम्बद्ध विषयों में से दो का स्नातकोत्तर कक्षाओं में अध्यापन होता हो।

ह०/-
प्रभाकर शर्मा
गंगाधर मठ

ह०/-
गोविन्द नारायण शर्मा
चण्डीप्रसादाचार्य

महोपाध्याय पाठ्यक्रम
वर्ग—व्याकरण (नव्य)

प्रथम प्रश्न पत्र—व्याकरणस्य दर्शनत्वम्, व्याकरणे गणपाठः
शास्त्रीय ग्रन्थः—

अंक

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|----|--|----|
| 1. | व्याकरणदर्शनभूमिका—श्री रामाज्ञा पाण्डेय | 35 |
| | अथवा | |
| | पाणिनीय व्याकरण प्रमाण समीक्षा—श्री रामप्रसाद त्रिपाठी | |
| | सं० वि० वा० । | |
| 2. | परमलघुमंजूपा—श्री सूर्य नारायण शुक्ल | 35 |
| 3. | सर्व दर्शन संग्रहस्य पाणिनीय दर्शनम् | 10 |
| 4. | गणरत्नमहोदधिः—वर्द्धमान | 10 |
| 5. | पाणिनीयगणपाठपरम्परा—कपिलदेव | 10 |

द्वितीय प्रश्न-पत्र—शब्दाद्वैतवादिनां तुलनात्मकमध्ययनं व्याकरणेतिहासश्च

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|----|---------------------------------------|----|
| 1. | वाक्यपदीयम्—द्वितीयकाण्डम् | 20 |
| 2. | शब्दकोप्नुमः—पद्मशाहिगकमात्रम् | 20 |
| 3. | वृहद्वैयाकरणभूषणम्—स्फोटप्रकरणम् | 20 |
| 4. | महाभाष्यभूमिका—श्री गिरिधर शर्मा | 25 |
| 5. | शब्दापशब्दविवेक—श्री चारुदेव शास्त्री | 15 |

अथवा

वर्ग—प्राच्य व्याकरणम्

प्रथम प्रश्न-पत्रम्

- | | | |
|----|---------------------------------|----|
| 1. | भट्टि काव्यम्—जयनंगनाटीकासहितम् | 50 |
| 2. | प्राचीन व्याकरणे न्यासाः काणिका | 50 |

द्वितीय प्रश्न-पत्रम्—बोद्धार्थः—

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|----|---|----|
| 1. | पैयाकरणनिद्धान्तमंजूपा—बोद्धार्थप्रकरणमात्रम् | 45 |
| 2. | परमार्थमारः पार्थनारिचि मिश्रा | 30 |
| 3. | महाभाष्यभूमिका :—गिरिधर शर्मा | 25 |

वर्ग—सामान्य दर्शनम्

प्रथम प्रश्न-पत्रम् :—

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|----|------------------------------------|----|
| 1. | प्रगन्तपादभाष्यम् (द्रव्यनिर्णयम्) | 30 |
|----|------------------------------------|----|

2. नारनंजरी (जयकृष्ण)	10
3. पदार्थतत्त्वनिर्ूपणम् (रघुनाथशिरोमणिः)	20
4. नांख्यप्रवचन भाष्यम्	20
5. दर्शनशास्त्रस्य इतिहासः	20

डा० उनेग मित्र

पं० बलदेव उपाध्याय,

डा० राधाकृष्णन्

पं० हरिग्रन्था

सर्वदर्शनसंग्रहस्योपाद्धात—म०म०वासुदेव अभ्यंकर

द्वितीय प्रश्न-पत्रम्

1. तंक्षेप्यारीरक भाष्यम् (प्रथमोअध्यायः)	30
अथवा	
अणुभाष्यम् (तर्कपादः)	
2. पातंजल योगसूत्रम् (नाथन पादपात्रम्)	30
(व्यास भाष्यम्)	
3. पदार्थ रत्ननाला	20
अथवा	
चिन्तानिः तर्कपादः	
अथवा	
भाट्ट दीपिका (प्रथमोअध्यायः)	
4. सिद्धान्त-कौमुदी-(कणपाठः)	20
अथवा	
वाक्य पदीयम् (कृत्यकाण्ड भाष्यम्)	
वर्ग—जैन दर्शनम्	

प्रथम प्रश्न-पत्रम् :

(क) प्रत्येयमत कमल नार्तण्ड (पूर्वाह्न)	50
(आ० प्रभाचन्द्र)	
(ख) ग्लोक वातिक (प्रथम एवं द्वितीय अध्याय भाष्य)	25
(आ० विद्यानन्दि)	
(ग) आत्मव्याप्ति	25
(आ० अमृतचन्द्रनूत्ति)	

द्वितीय पत्रम्:

(क) प्रभमयकमलमार्तण्ड (उत्तरार्द्ध)	50
(आ० प्रभाचन्द)	
(ख) श्लोकवार्तिक (पंचम अध्याय मात्र)	25
(आ० विज्ञानन्दि)	
(ग) गोम्मटसार (कर्मकाण्ड)	25
प्रकृति समुत्कीर्तन अधिकार मात्र)	
आचार्य नेमीचंद्र सिद्धान्त चक्रवर्ती	

तृतीय पत्रम्:

शोध प्रविधि: हस्तलेखा विज्ञानश्च

1. शोध, तस्यप्रकारा, अन्वेवणा, गवेपणा, साहित्यिक-शोधप्रकारः, शोधस्य तत्त्वं सिद्धान्ताश्च, ऐतिहासिक तुलनात्मकग्रन्थयनं च: शोधाधिकरणम्, शोधप्रयोजनश्च, पाठालोचनम्
2. शोधपत्रम् शोधत्रयेऽस्पष्टयनम्, सम्पन्नस्य तद्विषयक विपकनिर्वाचनम्, क्षेत्रिय शोधस्य पुनर्मूल्यांकनम् विषयस्य सम्बद्धता, संक्षिप्त-रूपरेखा ।
3. सामग्री संकलनम्, सहायकसंदर्भ ग्रन्थमूची, ग्रन्थान्तर उद्धरणदान-प्रकारः वर्गीकरणम्, नारायणग्रहणम् । संदर्भोत्प्रेक्षा, स्वकीयरूपरेखा-नुसार अध्यायानां विभाजनम्, शोधसारः प्रबन्धलेखनारम्भः ।
4. (क) प्राक्कथनम्, विषयसूची, मूलग्रन्थ, संकेतमूची, पश्चानुबन्ध परिशिष्टम्, नंदर्भ ग्रन्थसूची, नामानुक्रमिका. शोधस्य सारांश प्रतिपादनम्—महत्त्व—दिग्दर्शन च ।
(ख) संस्कृत हस्तलेखानां पठनम्, अन्तर्राष्ट्रीय संस्कृत लेखाचिन्तानां परिचय, हस्तलेखानामध्ययनस्य समस्या, मूलपाठाध्ययनस्व वैज्ञानिक प्रकाशः, संस्कृतहस्तलिखित ग्रन्थानां मूची—पत्रपाश्चेतिहानः ।

पाण्डुलिपि विज्ञानम्—पाण्डुलिपि विज्ञानसमस्य स्वरूप, पाण्डुलिपिना प्रकाशः, पाण्डुलिपिनावंशवृक्षनिर्माणस्वविधि :—पश्चजिलालेखानां गवेपणात्मकमध्ययनम् ।

लिपयः—ब्राह्मी, थारदा, नेवारी, बंगाली अन्यासां ग्रन्थलिपीनां (दक्षिणी विधिः)
मामान्यज्ञानम् कस्यान्तिदेकस्यां लिप्यां लिप्यन्तरस्य योग्यता (प्रज्ञो-
यमनिवार्यत्वं न लभेत) ।

टिप्पणी :—लिपियों तथा हस्तलिखित ग्रन्थों के अध्येता को अध्ययनकाल में कम से कम दो हस्तलेखा—भण्डागारों में जाना उपयोगी होना । उल्लेखीय भण्डार निम्न हैं :—

1. भण्डारकर ओरियण्ट रिसर्च इन्स्टीट्यूट, पूना ।
2. सरस्वती महल पुस्तकालय, तंजौर ।
3. एशियाटिक सोसायटी पुस्तकालय, कलकत्ता ।
4. ओरियण्टल इन्स्टीट्यूट, बड़ीदा, गुजरात ।
5. संस्कृत कालेज लाइब्रेरी, कलकत्ता ।
6. सरस्वती भवन, संस्कृत विश्वविद्यालय, वाराणसी ।
7. रघुनाथ टैम्पल पुस्तकालय, जम्मू ।
8. ओरिएण्टल रिसर्च इन्स्टीट्यूट, जोधपुर ।
9. एन०डी, इन्स्टीट्यूट, अहमदाबाद ।
10. राज लाइब्रेरी, दरभंगा ।

संदर्भ ग्रन्थ :—

1. शोध प्रविधि—डा० वित्तय मोहन शर्मा ।
2. शोध प्रक्रिया और विवरणिका—डा० सरनाम सिंह शर्मा ।
3. संस्कृत शिक्षानुशीलनम्—डा० गौरी शंकर ।
4. अनुसंधान के मूलतत्त्व—डा० उदयमानु सिंह ।
5. पाणिनीय शिक्षा—पंजिका भाष्य संहिता ।
6. पाणिनीय कालिकम् भारतवर्षम्—डा० बालुदेव शरण अग्रवाल ।
7. विज्ञान एवं व्याकरण दर्शन—डा० कपिल देव द्विवेदी ।
8. पतंजलिकालिकम् भारतवर्षम्—डा० बालुदेव शरण अग्रवाल ।
9. पाण्डुलिपि विज्ञान—डा० सत्येन्द्र ।
10. प्राचीनलिपिमाला—गौरी शंकर हीराचन्द श्रोत्रा ।
11. चित्र निबन्धादर्ग—श्री रघुनाथ शास्त्री ।
12. प्राचीन भारतीय व्याकरणों के ध्वन्यात्मक विचारों का विवेक-
नात्मक अध्ययन—श्री सिद्धेश्वर शर्मा ।
13. पाणिनी के उत्तराधिकारी—डा० उदयनागयण तियाड़ी ।
14. उत्कीर्ण लेखांजलि ।

15. विदग्धमुक्तामण्डलम् ।
16. औचित्य विचार चर्चा ।

चतुर्थ एवं पंचम प्रश्न-पत्रम् :—

लघुशोधप्रबन्ध :—(दो प्रश्न-पत्रों के समकक्ष)

1. लघु प्रबन्ध की पृष्ठ सीमा—150 से 200 तक होगी ।
2. लघु शोधप्रबन्धक विषया :—
 - (क) प्राचीनतम अनुसंधेय कोई विषय ।
 - (ख) संस्कृत की पाण्डुलिपियों (मुद्रितपाठ्यग्रन्थों का सम्पादन) ।
 - (ग) प्रौढ़ ग्रन्थों का सरलव्याख्यानीकरण ।
 - (घ) विविध प्राचीन टीकाओं का एकत्रीकरण के साथ सम्पादन ।
 - (ङ) संस्कृत भाषा में प्राचीन ग्रन्थ का अनुवाद ।

परिशिष्ट-1 बी

(सन्दर्भ : कार्यवाही विवरण निम्न सं. 7)

उदाहरणस्वरूप विश्वविद्यालय अनुदान आयोग के पत्र दिनांक 19-1-1983 में पाठ्यक्रम एवं प्रश्न-पत्रों में आवश्यक सुधार के सम्बन्ध में प्रदत्त सुझावों में :—

सर्वप्रथम पाठ्यक्रम सुविभक्त इकाइयों में हो। इससे पाठ्यक्रम के मुख्यांशों का समान महत्व बना रहेगा। तथा विषय का व्यवस्थित ज्ञान हो सकेगा। यह अपेक्षित है।

पाठ्यक्रम के इकाइयों में विभक्त रहने से छात्रों को मुख्यांश छोड़ने का अवसर भी मिलेगा क्योंकि इकाइयां अन्योन्याश्रित रहेंगी जिससे पूर्व परीक्षा में पूछे गये प्रश्नों को छोड़ने का अवसर भी नहीं मिलेगा। इसलिये परीक्षकों को हफ्तान्तर से मुख्यांशों से संबंधित प्रश्न पूछने का अवसर भी बना रहेगा। अन्यथा छात्र पूर्व परीक्षा में पूछे गये प्रश्न समझकर उन्हें छोड़ देते हैं जिससे छात्रों का तद्विषयक ज्ञान अपूर्ण हो रह जाता है।

प्रश्नों के विकल्प से सम्बन्धित विषय भी महत्वपूर्ण है। वस्तुतः प्रश्नों के सीमित विकल्प होने चाहिये क्योंकि अविक विकल्पों से प्रश्नों की आवश्यक संख्या बढ़ जाती है और छात्र पाठ्यक्रम के सीमित भाग को पढ़कर ही परीक्षा में उत्तीर्णिक प्राप्त कर लेते हैं। फलतः उनका तद्विषयक अध्ययन अपूर्ण रहता है जिसके परिणाम गम्भीर होते हैं।

साथ ही छात्रों से उक्त अपेक्षाओं के लिए आयोग का यह सुझाव सर्वाधिक महत्व का है कि छात्रों को निर्धारित पाठ्यक्रम पूरा करने के लिए नियत कालांश, अध्ययन सुविधाएं प्रयोगशाला सुविधादिक समुचित रूप से प्रदान की जाय जिससे उन्हें परीक्षा संबंधी किसी अनुविधा का सामना न करना पड़े।

प्रदशिष्ट बिन्दुओं का अगली बैठक में विचार कर लिया जावेगा।

MINUTES OF THE MEETING OF THE ADHOC COMMITTEE
OF COURSES IN HEALTH AND POPULATION EDUCA-
TION HELD ON 7.9.83 AT 12.00 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT, UNIVERSITY
CAMPUS, JAIPUR.

Present :

1. Dr. Rameshwar Sharma (Convener)
2. Dr. C.K. Joshi
3. Dr. B.M. Sharma

1. The Committee Scrutinized the statements of qualifications and teaching experience etc. of teachers received from the University teaching departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners in terms of clauses 2 (a) of Statute 25 of the University Hand Book Part II giving full names and correct addresses of examiners in adequate number so that examiners from outside the panel may not have to be taken. (Appendix-I).

2. The Committee could not offer any comments on the reports of examiners of the various examinations of 1983 as the same were not available.

3. The Committee recommended the same courses of Study and Text Books in the subject for the examination of 1986 as contained in 1982 edition of the syllabus.

4. The Committee entrusted the work of Hindi translation of the Syllabi to Dr. C.K. Joshi, and authorised him to send the same directly to the University.

The Committee ended with a vote of thanks to the Chair.

Convener,
Adhoc C.O.C. in Health and
Population Education.

APPENDIX-I

- | | | |
|--|---|------------------------------------|
| 1. Dr. Suresh Joshi,
Lecturer. | } | S.M.S. Medical College,
Jaipur. |
| 2. Dr. S.D. Gupta,
Lecturer. | | |
| 3. Dr. (Mrs.) Shaji Dammen
Lecturer in P.S.M. | } | S.P. Medical College,
Bikaner. |
| 4. Dr. Rajas Babu, Lecturer
in Medicine. | | |
| 5. Dr. Shiv Chand Mathur,
Lecturer in P.S.M. | } | J.L.N. Medical College,
Ajmer. |
| 6. Dr. Raghuvver Singh
Lecturer in P.S.M. | | |

1. Dr. (Mrs.) Vandana Sen,
Reader in P.S.M.
S.M.S. Medical College,
Jaipur.
2. Dr. A.K. Bharadwaj,
Reader in P.S.M.
Medical College, Jodhpur.
3. Dr. H.N. Mathur, Reader,
Medical College, Udaipur.
4. Dr. S.K. Chaturvedi,
Reader in P.S.M.
S.M.S. Medical College, Jaipur.

I Yr. T.D.C. Arts, Exam., 1983

Health & Population Education

Paper Setter & Examiner

Dr. Vandana Sen,
Reader, P.S.M.
S.M.S. Medical College,
Trimoori, Near Man Singh Hotel,
Sansar Chandra Road,
Jaipur.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN PHYSICS HELD ON 28.9.83 & 29.9.83 at 12.00 NOON IN
THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Professor, S. Lokanathan (Convener)
2. Shri V.S. Murthy
3. Shri H.C. Singhvi
4. Shri C.P. Bhargava
5. Shri S.B. Singh
(Regional College of Education, Ajmer).

1. Under Sub-Section (8) of Section 24E of the University Act, the Board *appointed* unanimously Dr. S. Lokanathan. Professor and Head of the Department of Physics, University of Rajasthan, Jaipur, as Convener of the Board of Studies in Physics for the term.

2. Under Clause (iv) of Sub-Section (4) of Section 34 of the University Act, the Board elected Shri V.S. Murthy, Head, Department of Physics, M.S.J. College, Bharatpur, as a member other than the convener of the Board of Studies to serve on the Committee for selection of Examiners in the subject for the year.

3. The Board scrutinized the statement of qualifications and teaching experience etc. of teachers received from the University teaching Departments, University Colleges, Affiliated Institutions and other Universities for inclusion in the revised panel of Examiners in terms of Clause 2 (a) of Statute 25 of the University Hand Book Part-II giving full names and correct addresses of Examiners in adequate number.

4. The Board offered no comments on the reports of Examiners and question papers set for various Examinations of 1983.

5. The Board recommended the same courses of Study and Text-books in the subject for the examination of 1986 as Contained in 1983 edition of the Syllabus.

6. The Board *resolved* that the translation work of the Syllabuses into Hindi be entrusted to persons technically competent on payment basis, if necessary.

7. The Board noted the contents of letter No. F. 3-29/80 (CP)II, dated 10.2.1983, received from U.G.C., New Delhi.

8. The Board noted the contents of letter No. F(3)82/CP/dated 28.2.82. received from U.G.C., New Delhi to re-structure the courses of study upto Under-graduate level.

The meeting ended with a vote of thanks to the Chair.

Convener.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN BOTANY HELD ON 30.9.83 AT 1.00 P.M. IN THE
VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY
CAMPUS, JAIPUR.

Present :

1. Dr. J.N. Kapoor (Convener)
2. Dr. Dalbir Singh
3. Dr. K.B.S. Dhillon
4. Shri K.P. Sarabhai
5. Shri R.K. Sahni
6. Dr. L.N. Vyas
7. Dr. B.D. Sharma
8. Shri H.M. Behl (Special invitee)

1. Under clause (iv) of sub-section (4) of Section 34 of the University act, the Board elected Dr. K.B.S. Dhillon, Principal, S.G.N. Khalsa College, Sriganganagar, member other than the convener of the Board of Studies to serve on the committee for selection of Examiners in the subject for the year.

2. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers received from the University teaching departments. University colleges. affiliated institutions for inclusion in the panel of examiners. It was felt that the panel put up before the members. is not upto date. and it needs revision. The office was asked to prepare revised upto-date panel. It was also decided to request the neighbouring Universities to send a list of their faculty members along-with their teaching experience and the areas of specialization.

3. The examiners reports of question papers set for the exam. of 1983 were not made available. hence no comments. It was however pointed out by the office that some complaints were received from students in respect of some papers and the same had already

been considered by the grievance committee appointed by the Vice-Chancellor and duly disposed of.

4. The Board recommended the courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the ordinances and regulations:

I. *Degree Examinations :*

- | | |
|---|------------|
| (a) First year T.D.C. (Pass)
course Exam. 1986 | —No change |
| (b) Third year T.D.C. (Pass)
course Exam. 1986 | —No change |

II. *Honours Examinations* (Two years course) :—

- | | |
|---------------------------|------------|
| (a) Part I Exam. of 1986 | —No change |
| (b) Part II Exam. of 1986 | —No change |

III. *Post-graduate Examinations :*

- | | |
|---|------------|
| (a) Previous (Annual scheme)
Exam. of 1986 | —No change |
| (b) Final (Annual Scheme)
Exam. of 1987 | —No change |
| M. Phil. Exam. | —No change |

The Board considered the Academic Council resolution dated 24 and 25th May, 1983 and resolved to recommend the courses and scheme of papers for the final year T.D.C. pass course Exam., 1986 as under :—

At present there are four papers i.e. two in second year and two in third year. All the four papers will be included in the syllabus of final year. It was decided to have three papers. each of 100 marks, covering the courses of II year and final year (For further details please see minutes of the last meeting of B.O.S. held on 29th June, 1983).

5. The Hindi translation of the syllabi of various examinations upto degree classes has already been submitted in the last meeting of B.O.S. held in Dec., 1982.

6. The Board noted the contents of the letter No. F. 3-29/80/C.P. II dated 10.2.1982 received from the Secretary, U.G.C., New Delhi.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(Dr. J.N. Kapoor)
B.O.S. in Botany

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN ZOOLOGY HELD ON 30.9.83 AT 1.00 P.M. IN THE
VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY
CAMPUS, JAIPUR.

Present :

1. Prof. A.S. Kapoor (Convener)
2. Dr. P.R. Ojha
3. Dr. A.K. Bhatnagar
4. Shri Y.K. Srivastava
5. Shri C.R. Kukar
6. Dr. B.G. Kapoor
7. Dr. C.A.P. Rao (Regional College of Edu., Ajmer)

1. Under Sub. Section (8) of Section 24 E of the University Act. the Board unanimously appointed Prof. A.S. Kapoor, Head, Univ. Deptt. of Zoology, Jaipur as convener of the Board.

2. Under clause (iv) of Sub-Section (4) of Section 34 of the University Act, the Board *elected* Shri P.R. Ojha, Govt. College, Nagaur. as a member other than the Convener of the Board of Studies to serve on the Committee for selection of examiners in the subject for the year.

3. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers received from the University teaching Deptt., University Colleges, affiliated Institutions and other Universities for inclusion in the revised Panel of examiner in terms of clause 2(a) of Statute 21 of the University Hand Book Part-II. giving full names and correct address of examiners in adequate number, so that examiners from outside the Panel may not have to be taken.

4. The Board could not offer any comments on the reports of examiners of the various examinations of 1983 as the same were not made available.

The Board recommended the courses of Study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Ordinances and Regulations:

I Year T.D.C. (Pass Course) 1986 :

No Change

II Year, T.D.C. (Pass Course) 1986 :

- (i) In Paper I, item II-(i) may be redrafted to read as follows:
Protozoa : *Euqlena*, *Monocystis*, *Elphidium* (*Polys-
tomella*), *Paramaecium*.
- (ii) In Paper I, item II-(ii) may be redrafted to read as follows:
Porifera : *Scypha* (*Sycon*); evolution of the canal
system upto syconoid type.

II Year T.D.C. (Pass Course) 1986 :

- (i) The Board observed that framing of Courses of Study and the Scheme of Examination for the III Year T.D.C. (Pass Course) Examination of 1986 based on the courses of study of the last two years of the three year course in the light of a decision of the University to this effect required a detailed and careful consideration. It was, therefore, resolved that a draft syllabus on this basis, be prepared by the Convener with the help of members of the Board and other subject teachers and the same may then be considered by it as a later date.
- (ii) In Paper I, item III-(i) may be redrafted to read as follows:
Blood vaseular system (including evolution of heart and arotic arches).
- (iii) In Paper I, item III-(iii) may be redrafted to read as follows :
Urinogenital system (including evolution of Kidney and urinary and Genital duets.).
- (iv) In the scheme of practical examination, items b and c may be merged into a single item which may read as follows :

	<i>Regular students</i>	<i>Ex-students</i>
Exercise in Cell Biology/Physiology	8 marks	8 marks

II B.Sc. Honours (Two Years Scheme)

(a) *Part I Examination* 1986

No Change

(b) *Part II Examination* 1986

It was noted that the last meeting of subject teachers had recommended that the following committee may frame the Syllabus for the Part II Examination of the II Year Honours Course (Two Year Scheme) :

1. Dr. O.N. Saxena (Convener)
2. Shri Y.H. Alambaijan
3. Dr. P.R. Ojha.

The Board confirmed this recommendation and resolved that the Convener of the above Committee may be requested to formulate the Syllabus which may then be placed before the Board for its consideration.

III. M.Sc. Previous (Annual Scheme) 1986 :

and

M.Sc. Final (Annual Scheme) 1987 :

No change was recommended in the Courses of study for the above two examinations.

IV. M. Phil., 1986 :

No Change.

6. It was, however, resolved that division of the course content of question papers into separate Sections, as was originally obtaining in the Annual Scheme of examination prior to the introduction of Semester Scheme, may be restored. It was further resolved that this recommendation of the Board may be given effect to for M.Sc. Previous (Annual Scheme) Examination of 1985 and M.Sc. Final (Annual Scheme) Examination of 1986.

7. The Board noted that it has already translated the syllabi in Hindi and requested the University to publish the same.

8. The Board considered letter No. F. 3-29/80 (CP) II dated 18.2.1982 regarding review of prescribed text books and other reading materials from the Secretary of the University Grants Commission and did not offer any comments.

9. The Board agreed in Principle with the minimum examination reforms recommended by the Chairman of the U.G.C. vide her D.O. letter No. F. 4-19/82/(ER) dated 19.1.1983, addressed to the Vice-Chancellor, University of Rajasthan.

10. The Board resolved that the Faculty would be the appropriate forum for considering the question of restructuring the courses of study at the under-graduate level as proposed by the U.G.C. vide its letter No. F. 1-3/82/CP dated 28.7.1982.

11. The Board resolved that in future examiners for conducting practical examinations of the three year degree course at various centres should also be appointed by the Committee for the Selection of Examiners.

12. The Board resolved that the University may send a set of Syllabi for various classes to each member of the Board.

The Meeting ended with a vote of thanks to the Chair.

Sd/-
A.S. Kapoor,
Convener, B.O.S.

MINUTES OF THE JOINT MEETING OF THE BOARD OF
STUDIES IN BOTANY AND ZOOLOGY (BIOLOGY) HELD
ON 30-9-83 AT 12.00 NOON IN THE VICE-CHANCELLOR'S
SECRETARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

- | | |
|--------------------------|-----------------------------------|
| 1. Dr. J.N. Kapoor | (Convener) |
| 2. Shri C.R. Kukar | |
| 3. Shri P.R. Ojha | |
| 4. Dr. K.B.S. Dhillon | |
| 5. Shri A.K. Bhatnagar | |
| 6. Dr. D. Singh | |
| 7. Shri A.S. Kapoor | |
| 8. Shri R.K. Sahani | |
| 9. Shri K.P. Sarabhai | |
| 10. Dr. L.N. Vyas | |
| 11. Dr. B.D. Sharma | |
| 12. Shri Y.K. Srivastava | |
| 13. Shri C.A.P. Rao | (Special invitees) |
| 14. Shri H.M. Behl | Regional College of
Education. |

1. Items 2 and 3 of the Agenda are to be considered in the subject meetings of the B.O.S. in Botany & Zoology.

4. The Board recommended that the existing courses of study and text-books in the subject of Biology be repeated for the 1st year T.D.C. Science (Pass Course) Examination of 1986.

The meeting ended with a vote of thanks to the chair.

Sd/- Convener.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN STATISTICS HELD ON 3.10.83 AT 12.00 NOON IN THE
VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY
CAMPUS, JAIPUR.

Present :

1. Dr. H.L. Agrawal (Convener)
2. Dr. B.D. Tikkiwal
3. Shri D. Hajela
4. Dr. Jokhan Singh.

1. The Board recommended that the existing courses of study and text-books for the following examinations of 1985 together with the relevant additions and/or alternations to the regulations be repeated :—

(i) Honours Examinations (Two years Scheme)

- (a) Part I Examination, 1986
- (b) Part II Examination, 1987

(ii) Post-graduate Examinations :

- (a) M.A./M.Sc. (Annual Scheme) Prev., Examination, 1986.
- (b) M.A./M.Sc./ (Annual Scheme) Final Examination, 1986.

(iii) M. Phil. Examination, 1986.

2. The Board considered the question of translation of Syllabi into Hindi and resolved that some experts be appointed for purpose and they be paid suitable remuneration.

3. The Board discussed a letter No. F. 3-29/80 (C.P.) II and, observed that necessary changes in syllabi have already been made recently.

4. With reference to Academic Council Res. No. 46 dated 24/25th May, 1983 pertaining to the examination reforms in the light of the guide lines from U.G.C., the Board agreed in Principal with the examination reforms. As regards framing the Syllabus in Units is concerned the Board will do the needful as and when directed by the University.

5. With reference to Ac. Council Res. No. 37 dated 24/25th May, 1983 pertaining to restructuring the courses of study at the U.G. level in light of U.G.C. guide lines, the Board observed the courses of study at U.G. level meet the guide lines.

The meeting ended with a vote of thanks to the Chair.

Convener.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN AGRICULTURE HELD ON 5.10.1983, AT 12.00 NOON
IN THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri Devi Singh (Convener)
2. Shri V.K. Juneja
3. Shri K.S. Joshi
4. Dr. R.S. Rawat

Special Invitees :

Dr. B.S. Sharma
Prof. J.K. Singh
Prof. V.P. Sharma
Prof. J.N. Mehrotra
Dr. R.M. Singh
Dr. R.A. Singh
Shri J.P. Jain

1. Under clause (iv) of Sub-section (4) of Section 34 of the University Act, the Board *elected* Professor K.S. Joshi, Dayanand College, Ajmer as member other than the Convener of the Board of Studies to serve on the Committee for selection of examiner's in the subject for the year.

2. The Board scrutinized the statements of qualifications and teaching experience etc. of the teachers received from the University Teaching Departments, University Colleges and Affiliated Institutions and other Universities for inclusion in the revised panel of Examiners and prepared the panels of examiners in terms of Clause 2(a) of Statute 25 of the University Hand Book Part II giving full names and correct addresses of examiners in adequate number so that examiners from outside the panel may not have to be taken.

3. The Board offered no comments on the reports of examiners and question-paper sets of the various examinations of 1983.

4. The Board did not recommend any change in the courses of study for the various examinations of 1986—

The Board noted that the Academic Council Res. No. 26 dated 24/25th May, 1983 about abolition of second year as Univ. Examination does not hold good for B.Sc. (Ag.) II.

5. The Board considered the item to translate the Syllabus into Hindi and resolved that the translation work of syllabus in Hindi be got done by the University.

6. The Board Considered a proposal for inclusion of the subject of psychology in the Faculty of Science and noted that the syllabus of B.Sc. (Ag.) classes is too heavy at present so it is not possible to incorporate a new subject.

7. The Board considered the letter No. F. 3.29/82. (C.P.) dated 18.2.82 and feels that the courses already prescribed in Agriculture is already practically oriented, and hence reorganising the course is not necessary at the moment.

8. The Board considered the facilities available at various institutions for imparting effective training in Agriculture and resolved as under :—

- (i) The minimum admission requirement for P.P. Ag. should be Higher Secondary Agriculture/Science with atleast 55% marks in aggregate.
- (ii) No weightage for N.C.C./Sports and games/extra curricular activities be given in working out the merit.
- (iii) Number of students to be admitted to P.P. (Ag.) and B.Sc. Ag. I should not exceed 40 in an institution.
- (iv) The Govt. of Rajasthan may be requested to look into man power requirement and suggest the No. of students to be admitted in case the requirement is more than 40 seats in an institution. Simultaneously the facilities for teaching namely, staff, laboratory buildings, equipments, contingency should also be increased accordingly.

- (v) In Practicals student-teacher ratio should be 20 : 1 as is followed in all other Agriculture universities of the Country.
- (vi) The Syllabus of Higher Secondary in Agriculture be revised looking to the requirement of background for degree in Agriculture at the University level.

The meeting ended with a vote of thanks to the chair.

Convener.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN HOME SCIENCE HELD ON 19TH DECEMBER, 1983
AT 12.00 NOON IN THE VICE-CHANCELLOR'S
SECRETARIAT, UNIVERSITY CAMPUS,
JAIPUR.

Present :

1. (Mrs.) Meera Verma (Convener)
2. Dr. (Mrs.) S. Grover
3. Dr. (Mrs.) S. Bajaj
4. Dr. (Miss) S. Anand Lakshmy
5. Dr. (Miss) G. Sublakshmy
6. (Miss) Meena Mathur

Special Invitees

1. Under clause (iv) of sub-section (4) of section 34 of the University Act, the Board elected (Mrs.) S. Grover, Asstt. Professor in Home Science, University Maharani's College, Jaipur as a member other than the Convener of the Board of Studies to serve on the Committee for selection of examiners in the subject for the year.

2. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers received from the University Teaching Departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners in terms of clause 2 (a) of Statute (25) of the University Hand Book Part II giving full name and correct addresses of examiners in adequate number so that examiners from outside the panel may not have to be taken.

3. The Board offered the Comments on the reports of examiners and question papers for the examinations of 1983 as under :—

- (i) B.Sc. (H.Sc.) Part III—paper XVII. child development.
The paper was a common paper set for the old scheme and the new scheme, thus limiting the choice to only 5 for the candidates of new scheme. (which included all

the regular students registered in 1980) This made all the five questions compulsory, causing dissatisfaction in all the Centres of examination.

- (ii) B.Sc.(H.Sc.) Part III, Paper XIII, extension and education—only 6 questions were set and out of that also one was out of course, thus again making all five questions compulsory. Besides a big portion on sociology was not included in the question paper

The members felt that the mistakes committed in the two papers were of very grave nature and in future care must be taken in the selection of examiners.

4. The Board recommended the courses of study and text-books in the subject for the following examinations together with the relevant additions and/or alterations to the ordinances and Regulations :—

(a) P.U.C. Examination—1986 (No change)

(b) Degree examinations :

Ist Year T.D.C. (Arts) (Pass course) 1986—No change

IInd Year T.D.C. (Arts) (Pass course) 1986—No change

IIIrd Year T.D.C. (Arts) (Pass course) 1986—No change

(c) B.Sc. (Home Science) Examinations :

(i) B.Sc. Home Science Pt. I Examination 1986—No change.

(ii) B.Sc. Home Science Pt. II 1986—No change except some modification in paper XI—clothing and Textiles (Appendix I).

(iii) B.Sc Home Science Pt. III—1986—No change.

5 The Hindi translation of the syllabuses for B.Sc. Home Science and M.Sc. Home Science could not be done by the Board. The Board further resolved that Hindi version of B.A. Home Science may be done by the Board after incorporating all changes in the syllabuses.

6. The Board noted the contents of guide lines for reviewing the text books by the U.G.C. letter No. F3-29CP II dated 18.2.1982

and selection of text books was made with consideration at the points given in the guide lines.

7. The Board considered a proposal for inclusion of the subject 'Psychology' in the faculty of Science as an optional subject and approved the proposal and resolved to recommend that it be accepted because the subject will have a great utility to the students of science in experimenting and research.

8. The Board strongly recommended that post-graduate classes in Home Science may be started in the University at the earliest the Board discussed and recommended the scheme and curriculum for M.Sc. (Nutrition) and M.Sc. (Child development) vide Appendix II and Appendix III.

The Board authorised the following members to prepare on the details of syllabus for consideration of the Board at its next meeting.

M.Sc. (Food & Nutrition)—Mrs. Mira Verma.

M.Sc. (Child Development)—Dr. (Mrs.) S. Grover.

It was suggested that another meeting of the B.O.S. be held in the month of February, 84 to finalise the Syllabus.

9. The members were of the opinion to evolve out a more balance curriculum for the B.Sc. Home Science and the Board resolved as under :—

- (i) Workshop on curriculum may be held in the University.
- (ii) Sub Committees in various aspects of the subject be constituted for modifying the syllabus namely Nutrition, Home Management, Extension & Education, Health Sc. and Science.

The meeting ended with a vote of thanks to the chair.

Convenor

APPENDIX—I

Clothing & Textiles Paper—I

Clothing for the child & the family.

Paper XI

Maximum Marks 50

Time 3 hours

Minimum Marks 18

100 periods

- I. Psychological and social Importance of clothing.
- II. Aesthetics in Design
 - (i) Principles of Design—Balance, Harmony Rythm in Proportion and Emphasis.
 - (ii) Elements of Design
 - (a) Color—1. Dimension of Color
1 Color Harmonies
3. Effect of color.
 - (b) Texture—1. Texture Analysis
2. Appropriate use of texture.
 - (c) Line & Shapes 1. Analysis of line & shapes.
2. Appropriate use of lines & shapes.
- III. Selection of suitable fabrics and clothing for family according to :—
 - (a) Age
 - (b) Figure
 - (c) Fashion
 - (d) occupation
 - (e) occasion
 - (f) climate
 - (g) Budget.
- IV. Criteria for selection of :—
 - (a) Readymade Garments
 - (b) House Hold Linen
 - (c) Furnishing.
- VI. Traditional fabrics of different states of India.
 - (i) Kashmir Shawls and carpets
 - (ii) Punjab—Phulkari
 - (iii) Bengal—Kanthas, Baluchar, Jamadani
 - (iv) U.P — Brocades, Chikenkari
 - (v) Gujrat—Patola, Sind & Kurch Embridery
 - (vi) Rajasthan—Bardani
 - (vii) Andhra Pradesh—Pochampali, Kalamkari
 - (viii) Kananataka—Kash da
 - (ix) Orisa—Ikat

VII. Care of clothing

- (i) Mending
- (ii) Renovations

References

1. Essentials of clothing construction by Nami Reich, Morls Berman, Margerat Hager.
2. Cocepts of clothing by Judy Graef & Joan Strom.
3. Art Principles in Clothing by Edith Parbowashi & Dolles Panlowster.
4. Clothing Construction and Wardrobe Planning by D.S. Lewis M.G. Bowers, M Kittunen.
5. Art in every day life by M. Goldstein & V. Goldstein.
6. Fashion and dress—L, Rath borne and E. Torpley.
7. Clothing for children—Thospson and Rea.
8. Colour and Design by Chempers.
9. Today's clothing by L. Bexter and A. Latshe.
10. Dress by oshe.
11. Guide to Modern clothing by M. Strure and Ednina Greiesen.
12. Clothing for Modern by Mahel Erwon.
13. How you look and dress by corson.
14. Textiles—by Wingate.
15. Textile and their care—by Hess.
16. Consumer Problems by Toolship.
17. Use and care of Textile Fibres—by Dhantyeji.
18. Handicrafts of India by Ruston J. Mehta.
19. Merg Publications—March 1964.
20. Handicrafts of India—By Kamla Devi Chattopadhya.
21. Economics of consumers by C.I. Gordon.

APPENDIX—II

SCHEME OF EXAMINATION FOR M.SC. FOODS & NUTRITION

M Sc. Previous :

Paper	Subject	Mark		Duration of		Teaching	
		Theory	Pract.	Examination	Theo. Pract.	Hrs/week	Theo. Pract.
I.	Biochemistry	100	50	3	6	6	8
	Physiology						
II.	Food Microbiology	50	50	3	6	4	4
III.	Research Methods and Statistics	100	—	3	—	6	—
IV.	Advanced Nutrition I	100	50	3	6	6	4
V.	Food Science	50	50	3	4	4	4
		400 + 200				26	20=46

M Sc. Final :

VI.	Advanced Nutrition II	100	50	3	6	6	4
VII.	Community Nutrition	100	50	3	—	6	4
VIII.	Institutional Management & Quantity Cookery	100	50	3	6	6	4
IX.	Dissertation	100	—	—	—	—	8
X.	Seminar & Project (Sessional)	—	50	—	—	—	4
		400 + 200				18 + 24=	2

APPENDIX—III

SCHEME OF EXAMINATION FOR M.SC.
(CHILD DEVELOPMENT)

M.Sc. Previous :

Paper	Subject	Marks		Duration of Examination		Teaching Hrs/week	
		Theo.	Pract.	Theo.	Pract.	Theo.	Pract.
I.	Theories & Concept in child development	100	—	3	—	6	—
II.	Principles of child Development	100	100	3	4	6	4
III.	Early Childhood Education	100	—	3	—	6	—
IV	Research Methods & Statistics	100	—	3	—	6	—
Total		400 ÷ 100				24	4=28

M.Sc. Final :

V.	Sociolization & Family dyanamics	100	—	3	—	6	—
VI.	Childran with special needs.	100	50	3	4	6	4
VII.	Administration of Childrens Institutions	100	50	3	4	6	4
VIII.	Dissertation or Field Project reports case study	100	—	—	—	—	8
Total		400 ÷ 100				18	16=34

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN ENGINEERING AND TECHNOLOGY HELD ON 19TH
DECEMBER, 1983 IN THE VICE-CHANCELLOR'S
SECRETARIAT, JAIPUR.

Present :

1. Dr. P.N. Modi (Convener)
2. Dr. S.C. Agarwal
3. Dr. T.V. Rajan
4. Dr. B.C.L. Agarwal
5. Dr. M.B. Mawal
6. Shri C.L. Arora
7. Dr. A.M. Hardas
8. Dr. Y.N. Gaur
9. Dr. D.C. Surana *External Member.*

N.B.—Dr. D. Kumar, Principal, M.R.E. College, Jaipur, Dean, Faculty of Engineering and Technology was also present in the meeting.

1. Under sub-section (8) of Section 24 E of the University Act, the Board unanimously *appointed* Dr. P.N. Modi, Reader & Head of the Department of Civil Engineering, M.R.E. College, Jaipur as Convener of the Board of Studies in Engineering and Technology.

N.B.—The aforesaid resolution was passed under the Chairmanship of the Dean, Faculty of Engineering and Technology.

2. Under Section 34 (4) (iv) of University Act, Dr. A.M. Hardas Professor and Head of Mechanical Engineering Department, M.R. Engineering College, Jaipur was unanimously *elected* as member other than convener of the Board of Studies to serve on the Committee of selection of examiners for the year 1983-84.

3. The Board *scrutinised* the statements of qualifications and teaching experience etc. of the teachers, received from the affiliated

institutions and other Universities for inclusion in the revised panel of examiners and prepared a complete panel of examiners in terms of clause 2(a) of Statute 25 of the University Hand-Book Part-II, giving full names and correct addresses of examiners in adequate numbers.

4. Many reports of examiners were placed on the table. They were read through by the members. It was decided that the Convener may communicate appreciative and critical remarks to the Principals of the college affiliated under the Faculty of Engineering for further necessary action as he deems fit.

5. With reference to Faculty of Engineering and Technology Res. No. 3(3) dated 28th April, 1983, the Board *reconsidered* the proposal for introducing a new Post-graduate Diploma course in Public Health Engineering and Hydrology in the light of the following resolution :—

“It be *referred back* to the Board for re-consideration in the light of the recommendation that it may like to make on the proposal referred to in its Res. No. 10 dated 6th Feb., 1982. The Board may also consider inter-relating the Diploma course with the Post-graduate Degree course so that a candidate who possesses a Diploma could obtain a Post-graduate degree after doing some additional course and passing an examination in some additional papers/practicals.”

Resolved that the matter be *deferred* till the Head of the Department of Civil Engineering comes with definite proposals. The Convener Board of Studies, who is the Head of the Department of Civil Engineering was requested to take action in the matter.

6. With reference to Faculty of Engineering & Technology Res. No. 4 (I) (xvi) dated 28th April, 1983 the Board reconsidered the following matters referred back to it vide paras VII, VIII & X :—

(VII) The elective subjects and the syllabi thereof recommended for II, III and Final B.E. Examinations in all the four branches be *referred back* to the Board for re-consideration with the observation of the faculty that in each branch, elective subjects prescribed should pertain to

the other 3 branches and that the number of elective subjects prescribed for each examination should be 4.

(VIII) The Syllabus for the subject of Electrical Engineering Materials prescribed for II B.E. (Electrical Engineering branch) Examination be *referred back* to the Board for necessary modification as a substantial portion of the existing syllabus recommended by the Board is already covered in the syllabus of +2 examination of the 10+2 scheme.

(X) The Syllabus of the subject of 'Theory of Elasticity and Analysis' prescribed for III B.E. (Civil Engineering). Examination be *referred back* to the Board for re-consideration and recommending a revised syllabus.

Resolved to recommend as under :-

(i) *Ref: Para (VII) above :*

Only for II B.E. examination in all the four branches the elective subjects prescribed should pertain to the branches other than the parent department.

(ii) *Ref: Para (VIII) above :*

Revised syllabus for the subject "Electrical Engineering Materials" prescribed for II B.E. (Electrical Engineering) submitted by the Head of the Department of Electrical Engineering (*Vide Appendix-I*) be adopted.

(iii) *Ref: Para (X) above :*

The Head of the Department of Structural Engineering be requested to revise syllabus of "Theory of Elasticity and Analysis" prescribed for III B.E. Civil Engineering Examination and submit the same to the University for consideration of the Board at its next meeting.

7. The Board considered the following proposals made by Prof. C.S. Upadhyaya, Head of Electrical Engineering Department and forwarded by the Principal, M.R. Engineering College, Jaipur under cover of his letter No. 4 (N) 5, Acad-MREC 81 1129 dated 17.1.1983:

1. There should be two members on the Board of Studies from the department of Electrical Engineering—one representing the subject of Power Engineering and another representing the subject of Electronics & Communication Engineering.
2. There should be two streams of M.E. (Engg.) one, stream could be based on theory papers for two semesters and one semester (in partial fulfilment of M.E.) and another stream could be based completely on theory papers. The students may opt for any one of them.
3. Consideration may be given to replace the present Final B.E. project also by a theory paper. This is because although the present idea of project is good but we are not able to implement it properly. Replacement of project by theory paper will save money for students and also will enable them to learn one additional paper in these days of advancing technology in a very systematic way.

Resolved to recommend as under :

- (I) *Ref: Proposal No. (1) above :*

The Board reiterates its earlier resolution to the effect that each Engineering Department should have its separate Board of Studies and the department of Physics, Chemistry, Mathematics & Humanities should combinedly have one Board of Studies.

- (II) *Ref: Proposal No. (2) above :*

The provisions for M.E. by Research alone as permissible in other technical institutions in the Country may be made. The candidates may be scrutinised by a Committee comprising the Dean, Faculty of Engineering and Technology, University of Rajasthan, Convener, Board of Studies in Engineering & Technology, Head of the Department concerned alongwith one Seniormost member of the staff of that Department. The duration shall not be less than the duration for the part-time M.F. course

(III) Ref: Proposal No. (3) above :

It be *not* accepted.

8. The Board *considered* the following modifications suggested by the Professor & Head of Metallurgical Engineering Department and convener admission Committee, M.R.E. College with regard to admission of Diploma holders to III B.E. (Met) forwarded by the Registrar, M.R.E. College, Jaipur, vide letter No. F. 4(R)4/Adm/MREC/74/2482 dated 26.2.1983 :—

1. Out of the six seats for which admissions are made at the the III B.E. (Met.) level, three seats (i.e. 50%) may be reserved for the students from the Rajasthan State.
2. 30% of the marks can be reserved for interview. The marks obtained by the candidates in the qualifying examination (Diploma in Engineering) may be given 70% weightage.
3. Students with diploma in Metallurgy be given preference. If such candidates are not available, candidate with the diploma in other branches of engineering may be considered for admission.
4. At present higher Secondary or equivalent is assential qualification. On the contrary, in some states the minimum requirements for admission to diploma in engineering is S.S.C. It is recommended that the minimum qualification may be kept as S.S.C./Higher Secondary/Intermediate as the case may be.
5. The minimum percentage of marks required at the S.S.C Higher Secondary/Intermediate (which forms the basic qualification for admission to diploma in respective states) may be raised to 60%.

In this connection the Dean, Faculty of Engineering also pointed out that the Board of Governors of the M.R.E. College, Jaipur has agreed to admit the Diploma holders to III B.E. (as the case may be) in Civil, Mechanical, Electrical and Electronics Branches.

Resolved to recommend as under :

1. In view of the 4 years course, the admission of diploma holders may be made to II B.E. level. 50% of the seats may be reserved for the students from Rajasthan and remaining 50% seats may be reserved for students from rest of the states in the Country. At this stage, the Dean, Faculty of Engineering & Technology pointed that this has been implemented from the Session 1983-84, while making admissions of diploma holders to III B.E. (Metallurgy).
2. 30% of the marks may be reserved for interview. The marks obtained by the candidates in the qualifying examination (diploma in Engg.) may be given 70% weightage.
3. Students with diploma in respective branch of Engg. may be given preference. If such candidates are not available, candidates with diploma in other branches of Engg. may be considered for admission.
4. The minimum qualifications required for admission to diploma in Engineering may be kept as Higher Secondary/ Intermediate as the case may be.
5. The minimum percentage of marks required at the Higher Secondary/Intermediate (which forms the basic qualification for admission to diploma in respective States) may be raised to 60% in Physics, Chemistry and Mathematics.

It was also resolved to recommend that Diploma holders admitted to degree courses may be awarded division in the final B.E. examination on the basis of their marks from II B.E./III B.E. as the case may be, onwards.

9. The Board considered the recommendations of the Committee appointed by it vide its Res. No. 10 dated 6th February, 1982 to modify the rules of M.E. (Part-time) and P.G. diploma course made at its meeting held on 8-1-83 (*Vide Appendix-II*)

Resolved to recommend that if a candidate clears all the theory papers (excluding Seminar, Project and Dissertation) within 6 ac-

ademic sessions. he will be eligible for award of P.G. Diploma in the respective branches of Engineering and thereafter he will not be eligible for award of Post-graduate degree in the respective Branch of Engineering.

The Board *further resolved to recommend* that the duration of M.E. Part-time courses may be of 5 semesters as per the teaching scheme enclosed at (*Appendix-III*).

10. The Board considered the following proposal made by Dr. C.S. Upadhyaya, Professor of Electrical Engineering, M.R.E. College, Jaipur.

“The following change may be made in the IV (Final) Year, Electrical Engineering—Electronics option :-

Paper No. II (Acoustical Engineering) may be exchanged with paper VII A—Radar and Television Engineering. It means that Acoustical Engineering may be made the Elective paper and Radar and Television Engineering may be made compulsory paper.”

Resolved to recommend that the proposal of Dr. C.S. Upadhyaya *be accepted*.

11. The Board recommended courses of study and Text Books for the following examinations together with the relevant Additions and/or alterations to the Regulations, Ordinances and Statutes as follows :—

(1) A. B.E. Examinations (Four year scheme)

- (i) 1st B.E. Examinations, 1985 and 1986
- (ii) 2nd B.E. Examinations, 1985, 1986 and 1987.
- (iii) 3rd B.E. Examinations, 1986, 1987 and 1988.
- (iv) 4th B.E. Examinations, 1987, 1988 and 1989.

The Board recommended *no change* in the courses of study except that the 100 marks prescribed for ‘C—Tutorial and assignment may be converted into the General Fitness for Engineering Profession. The same may be made applicable from the Examinations of 1985 onwards.

B. B.E. Examinations (Five years scheme) :

- | | |
|---|----------------|
| (i) Fourth B.E. Exam.. April/May, 1986 | } No
Change |
| (ii) Final B.E. Exam.. April/May, 1986. | |

(II) M.E. (Regular) Courses :

- | | |
|--|-----------------|
| (i) First Semester Exam.. Nov./Dec.. 1985. | } No.
Change |
| (ii) Second Semester Exam.. April/May, 1986. | |
| (iii) Third Semester Exam.. Nov./Dec.. 1986. | |

(III) M.E. (Part-time) Course :

- (i) First Semester Examination, November/December, 1985.
- (ii) Second Semester Examination, April/May, 1986.
- (iii) Third Semester Examination, November/ December, 1985.
- (iv) Fourth Semester Examination, April/May, 1986.
- (v) Fifth Semester Examination, November/ December, 1985.
- (vi) Sixth Semester Examination, April/May, 1986.

In this connection the Board resolved to recommend that the duration of M.E. Part-time should be of five semesters instead of six semesters. For further details, see Res. No. 9 of the Board.

(IV) Post-graduate Diploma Examinations :

- (i) Post-graduate Diploma in Irrigation and Hydrology Examination, 1986.
- (ii) Post-graduate Diploma in Pre-stressed and concrete Examination, 1986.
- (iii) Post-graduate Diploma in Industrial Engineering and Interpreneurship Examination 1986.
- (iv) Post-graduate Diploma in Electrical Drives Examination, 1986.
- (v) Post-graduate Diploma in Instrumentation Examination, 1986.

(vi) Post-graduate Diploma in Mineral Dressing Examination. 1986.

12. The Board *appointed* the following Committee to go into the matter regarding starting of M.Phil. Course in Applied Mathematics and its recommendations may be considered by the Board of Studies :

1. Dr. R.K. Gupta. Department of Mathematics, M.R.E. College. Jaipur—Convener.
2. Prof. M.C. Gupta. Deptt. of Mathematics. University of Rajasthan. Jaipur—Member.
3. Prof. M.P. Singh. Deptt. of Mathematics, I.I.T., Delhi.
—Member.
4. Prof. K.C. Gupta. Deptt. of Mathematics. M.R.E. College, Jaipur.
—Member

13. The Board *appointed* the following committee for preparing the Scheme of examination and syllabus for M.E. (Electronics Course) both full time and part time, and its recommendations may be placed before the Board of Studies for consideration :

1. Dr. D.C. Surana. Professor of Electronic M.B.M. Engineering College. Jodhpur.
2. Prof. (Miss) Bharati. Professor of Electronic. Indian Institute of Technology, New Delhi.
3. Prof. A.K. Agrawal, Professor & Head of Department of Electronics, Regional Engineering College. Kurukshetra.
4. Dr. C.S. Upadhyaya. Professor of Electrical Engineering, M.R.E.C., Jaipur.
5. Head of the Department of Electrical Engineering, M.R.E.C. Jaipur.
—Convener.

14. The Board *resolved to recommend* the introduction of part-time M.E. Course in Metallurgy of 5 semesters duration. The Scheme of examination and syllabus is enclosed (*Vide Appendix-IV*).

The meeting ended with a vote of thanks to the Chair.

Sd -
Convener.

APPENDIX-I

(Ref: Res. No. 6 (ii) of the Minutes)

II B.E. (ELECTRICAL) (Four Year Course)

ELECTRICAL ENGINEERING MATERIALS :

Electrical Conduction :

Introduction, classical, band model and wave mechanical model of conductivity, electrical, resistivity of conductors, multiphase solids and ionic solids, electrical resistor materials.

Semi-conductors :

Introduction, valance-bond model, model of hole conduction, extrinsic semiconductors, carrier mobility, hall effect, effect of temperature on mobility, effect of temperature on carrier density and conductivity, minority carriers.

Semiconductor Devices :

Introduction, barrier rectification and contact potential, Fermi level in semiconductors, p-n junction rectification, transistors tunnel diode photo cells and photo conductors, thermistors.

Semiconductor Materials :

Semiconducting compounds, zone refining crystal growth, junctions, integrated circuits.

Magnetism :

Introduction, Weiss field and magnetic domains, antiferromagnetism and ferromagnetism, ferro-magnetic anisotropy and magnetostriction, magnetic energy and domain structure.

Magnetic Materials :

Introduction, hard and soft magnetic materials, iron-silicon alloys, soft iron nickel alloys, soft ferrites and garnets, hard magnets, fine particle magnets tapes and films.

Dielectrics :

Introduction, field vectors, polarization, effect of frequency and temperature, energy loss ferroelectrics, piezoelectricity, uses of dielectrics.

Superconducting Materials :

Introduction, critical field and critical current density, superconductivity and the periodic table, magnetic properties of superconductors, penetration depth and thin films, surface energy, hard and soft superconductors, superconducting magnets.

APPENDIX-II

(Ref: Res. No. 9 of the Minutes)

The Committee appointed by Board of studies in Engineering and Technology met on 8.1.83 at 12.00 Noon in the Vice-Chancellor's Secretariat, University Campus, Jaipur.

Present :

1. Prof. C.S. Upadhyaya *Chairman*
2. Prof. (Dr.) T.V. Rajan.
3. Dr. M.B. Mawal.

The matter was discussed. It was resolved that :

"All regular and part-time candidates registered for M.E., who have cleared all their theory papers (excluding seminar, project and dissertation) may be awarded Post-graduate Diploma in the respective branches of engineering.

As and when the candidate completes seminar, project and dissertation, M.E. Degree in the respective branches may be awarded.

This Ordinance may be numbered as O.319-QXX

O—319-R XX for both regular and part-time M.E. Course.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(C.S. Upadhyaya)
Chairman.

APPENDIX III

(Ref. : Res. No. 9 of the minutes)

Teaching and Examination Scheme for M.E. (Civil Water Resources Engineering Course (Part Time))

S.No.	Subject	Teaching Scheme		Examination Scheme Marks			
		Working hours per week		Duration	Paper	Prac. &	Total
		Lectures				sessional	
		3	4	5	6	7	8
1	2						9
FIRST SEMESTER EXAMINATION							
1.	Applied Mathematics	4	2	6	3	100	—
2.	Fluid Mechanics	3	1	4	3	100	50
3.	Principles of Structural Design	2	1	3	3	100	50
Total 1st Semester :		9	4	13	—	300	100
SECOND SEMESTER EXAMINATION							
1.	(a) Land & Water Management OR (b) Chemistry and Micro-biology for Public Health Engineers.	4	2	6	4	100	50
2.	(a) Free Surface Flow OR (b) Public Health Engg., I	4	2	6	4	100	50
3.	Project	—	3	3	—	—	150
Total 2nd Semester :		8	7	15	—	200	250
							450

THIRD SEMESTER EXAMINATION

1. Economic Principles of Water Resources Planning and System Engg.,	4	1	5	3	100	50	150
2. Surface water Hydrology	3	1	4	3	100	50	150
3. Seminar		3	3			100	100
Total 3rd Semester ;	7	5	12		200	200	400

FOURTH SEMESTER EXAMINATION

1. (a) Irrigation Structural Design OR (b) Public Health Engg., II.	4	2	6	4	100	50	150
2. Ground Water Hydrology	3	1	4	3	100	50	150
3. Any one of the following Electives ; (i) Advanced Fluid Mechanics (ii) Advanced Hydrology (iii) Advanced Design of Irrigation Structures (iv) Advanced Public Health Engg., Design, (v) Water Resources Systems (vi) Environmental Engg.,	4	2	6	4	100	50	150
Total 4th Semester ;	11	5	16		300	150	450

FIFTH SEMESTER

1. Thesis/Dissertation		12	12			300	300
Total 5th Semester ;		12	12			300	300
Grand Total ;	35	33	68		1000	1000	2000

M.E. (Civil) Water Resources Engineering }
 OR M.E. Environmental Engineering } *Common paper*

APPLIED MATHEMATICS

- I. Vector Calculus : Vector and Scalar Point functions. Gradient, curl and divergence.
- II. Complex variables: Cauchy-Riemann equations. Analytic and Harmonic functions. Taylor's and Laurent's series. Cauchy and Residue theorems alongwith their applications. Conformal mapping by elementary functions.
- III. Numerical Methods :
 - (i) Interpolation and Approximation : Finite differences. difference operators. Lagrange's interpolation formula. Newton's forward and backward difference formulae. Bassel's and Stirling's interpolation formulee. Numerical differentiation. Numerical Integration--Simpson and Newton-Cotes Methods.
 - (ii) Matrix Methods : Solution of linear equations. Matrix inversion. Eigen values.
 - (iii) Numerical solution of differential equations. Modified Euler method. Runge Kutta fourth order method. Milne's predictor-corrector method. Numerical solution of Laplace's equation in two dimensions by Liebmann's process.
- IV. Transforms Calculus :

Definiton and simple properties of Laplace and Fourier transforms, their applications to the solution of ordinary and partial differential equations with special reference to Laplace in two variables wave and diffusion equations in one variable.
- V. Probabilities and sets. Discrete sample spaces. Postulates of probability. Conditional probability. Probability Distributions Binomial and Poisson distributions. Multivariate Probability distribution. Probability densities and distribution functions Normal and chisquare distributions. Multivariate probability densities. Mathematical expectations and moments of discrete and continuous variables..

FLUID MECHANICS

Mathematical foundations of Fluid Mechanics. Historical development.

Ideal fluid theory. Foundations of flow analysis. Basic laws for systems and control volumes. Continuity equation. Eulers equations. Bernoulli equation. Linear momentum equation. Application. Vector notation.

Incompressible irrotational flow. Circulation vorticity, velocity potential, stream function and flow-nets. Superposition of flows. Pressure distribution around submerged bodies. Lift. Magnus Effect. D' Alembert Paradox.

Real fluids. Viscosity and its significance. Stokes viscosity law. Navier-Stokes equations. Couette flow. Flow in a circular pipe. Creeping motion. Parallel flow past a sphere. Stokes law for terminal settling velocity and Oseen correction.

Boundary Layer—Theory Laminar boundary layers. Two dimensional Boundary layer equations. Blasius solution for flat plate. Momentum integral equation, displacement and momentum thickness.

Separation. Vortex trail. Boundary layer control by the various methods.

Introduction to turbulent flow. Eddy viscosity. Reynolds' stresses and significance. Mixing length theory. Turbulent boundary layer. Velocity distribution. Application of momentum integral equation.

Pressure distribution around immersed bodies. Calculation of Drag and lift. Form drag, skin friction drag, total.

Dimensionless Numbers. Eulers Reynolds, and Froudes numbers and their significance.

PRINCIPLES OF STRUCTURAL DESIGN

(1) Theory of Elasticity :

Analysis of strain and stress. Stress strain relation. Concept of elastic strain energy. Strain energy expressions. Complementary energy.

Plane strain and plane stress problems. Equilibrium equation in displacements. Stress compatibility equations.

LAND AND WATER MANAGEMENT

- (1) Irrigation Soils : Soil moisture movement. Irrigation and water requirements of crops. Unsaturated flow in porous media. Moisture profiles during infiltration due to ponded water.
- (2) Irrigation Methods : Elements of irrigation control structures. Irrigation and distribution systems. Corrugation and furrow irrigation. Border strip irrigation. sprinkling and drip irrigation. Sub-irrigation. Land levelling.
- (3) Drainage : Physical and mathematical theories of till and ditch drainage. Design of a drainage system.
- (4) Conservation of water resources : Conservation practices. command area development. Lining of canals and water courses. Evaporation control. mulching Multiple cropping. Irrigation practices in arid and semi-arid lands.
- (5) Soil erosion : Soil erodibility, rain and flow erosivity, slope and length effect. gully erosion. erosion equation. Control of soil erosion.
- (6) Flood control : Flood plain management. Flood damages. Structural and non-structural measures of flood control.
- (7) Mathematical Models of Land and water management Con-junctive use of surface and groundwater.

CHEMISTRY AND MICROBIOLOGY FOR PUBLIC HEALTH ENGINEERS.

1. Elements of water chemistry : Solution and suspension of impurities. solutions and solubility. Solutions of Ionised Solutes Chemical equilibria in solution. Acid-base equilibria. Oxidation-Reduction Processes. Electrode potentials Rates of chemical reactions. Absorption isotherms. Electro-kinetic properties of colloids. Stability and Coagulation of colloids.
2. Basic concepts of Bio-chemistry : Enzymes. Buffers. Bio-chemistry of Carbohydrates, proteins. fats and oils.
3. Analysis of water and waste water : Physical, chemical and bacteriological tests commonly used for the analysis of water and waste water.
4. Fundamentals of Sanitary Microbiology : Bacteria (forms. cell structure. chemical composition. Metabolism) Algae (identification, classification, culture media metabolism). Protozoa. Rotifers. Cestodans. Worms and Larvae. Energy concepts in biodegradation. Synthesis, growth and death of micro-organisms. Population dynamics.

function, long run production, Simple examples of Water Resources projects explaining the concept of production function. The net benefit function and optimality conditions.

2. Objectives other than national economic efficiency. Procedures for incorporating multiple objectives in project design and selection.
3. Economic Factors Affecting System Design : Budgetary constraints.
4. Measurements of Economic Efficiency Benefits and Costs : Examples of project benefits and costs. Measurement of benefits and cost comparable in monetary terms. Use of the cost of the best alternative project as a measure of benefits. Issue of secondary benefits and costs.
5. Comparison of Benefits and Costs over time : Rate of return. Annual cost and annual worth comparisons. Present worth analysis. Determination of the discount rate. Benefit and cost patterns over time. Appropriate length of the planning period.
6. Criteria for Project Design and Selection : Consideration of a broad range of alternatives. Rules for optimum selection of projects. Intangible benefits. Introduction to cost-effectiveness analysis.

SYSTEMS ENGINEERING

1. Use of computers : Analog and digital computers. Basic Principles of Fortran programming.
2. Basic concepts of a system and systems engineering Problem formulation. Limitations of systems engineering. Optimization methods. Rules for optimum project design.
3. Linear Programming : Fundamental properties. Graphical and Simplex methods. Simplex tableau. Duality theory. The Transportation problem.
4. CPM and PERT Methods.
5. Dynamic Programming : Characteristics and formulation and solution of simple problems.
6. Decision Theory : Decision under certainty, under risk and under uncertainty.

Foundation treatment, grouting, drainage wells, drainage galleries, Stress concentration.

Embankment dams: Homogenous and zoned earthen embankments. Foundation requirements. Typical cross-sections.

Stability analysis of earthen dams. Slip circle method. Wedge method. Seepage through and beneath dams. Cosagrandes. base parabola. Calculation of seepage rate. Flow net during the steady seepage and during sudden drawdowns. Pore pressures and their significance. Design of filters and rock toes. Slope protection Earth moving equipment.

Rockfill dams & Earth-rock dams. Construction techniques of embankment dams. Modes of failure.

Arch dams : Constant angle, constant radius and double curvature dams.

Methods of analysis. Cylinder theory. Elastic theory. Trial load analysis. Introduction to modern methods of analysis.

Spillways : Different types of spillways and their design criteria. Design of stilling basins. Design of weirs and canal structures on permeable foundations. Khosla theory and applications.

Public Health Engineering-II :

1. Principles of water quality management.
2. Water Treatment Plant Design : General design considerations. Types of Plants. Detailed design of various units such as : Aeration, Rapid Mixing and Flocculation.
3. Design of water distribution system. Hardy cross methods.
4. Design and Construction of sanitary and Storm Sewers. Surveys and investigations, quantity of Sanitary Sewage. Quantity of storm water. Design of Sewer Systems Manholes Sanitary sewage Diversion and Storm water overflow devices. Siphons. Materials for sewer construction. Construction methods.
5. Design of wastewater and stormwater pumping stations.
6. Sewage treatment plant design : Detailed design of various units of sewage treatment plants.
7. Principles of industrial waste treatment. Collection and disposal of solid wastes.

GROUND WATER HYDROLOGY

1. Occurrence of ground water. Porous materials. Darcy's law. Permeability and porosity. Anisotropy. Hydraulics of ground water. Differential equations of flow.

2. Potential Flow : flownets, boundary conditions. Steady State flow. Confined aquifer. Unconfined aquifer.
3. Mechanics of well flow and pumping tests : Steady and unsteady flow in confined and unconfined aquifers. Boundary effects and methods of images. Leaky aquifers. Partial penetration of wells. Interference of well. Yield of wells.
4. Groundwater development : Tubewells. Artificial recharge. Conservation. Groundwater prospecting. Ground water level fluctuations. Salinity of ground water. Ground water pollution. Infiltration galleries.

ADVANCED FLUID MECHANICS

1. Ideal fluid flow : Three dimensional line source and sink, doublet, flow in a corner and other examples and superposition. Principles of conformal mapping.
2. Laminar flow : Approximate solutions of Navier-Stokes equation for simple cases. Laminar two dimensional jet. Flow past a wedge. Parallel streams in laminar flow. Hydrodynamics of jets, wakes and cavities. Spreading of wakes. Elements of Dispersion and diffusion. Vortex fields, vortex rings and vortex sheets. Kelvin's theorem.
3. Turbulent flow : Reynolds' equations. Measurement of turbulence. Iso-tropic turbulence and its dynamics. Turbulent diffusion. Energy spectrum.
4. Differential equations of motion for unsteady flow in pipes and channels and methods of solution.
5. Elementary Two-phase flow in porous media.
6. Flow-induced vibration. Stability of flow. Vedernikov & Strouhal Numbers.

ADVANCED HYDROLOGY

1. Principles of hydrometeorology, cloud seeding. Weather forecasting.
2. Instantaneous unit hydrographs. Time area diagrams. Conceptual mathematical models. Hydrologic system analysis and system synthesis. Non-linear systems.
3. Simulation models for rainfall and runoff relationship.
4. Stochastic Hydrology. Time series analysis
5. Physical and mathematical principles of steady and unsteady ground water movement. Solution of groundwater problems by conformal mapping. Boussinesq equation and its solution.

6. Principles of ground water management.
7. Hydrology of floods and droughts. Statistical theory of extreme values. Gumbels asymptotic distribution for floods and droughts.

ADVANCED DESIGN OF IRRIGATION STRUCTURES

1. Design of buttress dams. Unit column method. Multiple arch dams. Miscellaneous dams. Instrumentation for the concrete dams.
2. Design of vertical lift and sector gates. Flow induced vibrations and down-pull forces. Gate seals.
3. Design of penstocks, surge tanks and tunnels for water carriage system. Intake and Trash-rack design.
4. Design of outlet sluices through dams.
5. Principles of design of hydro-power stations. Underground installations.
6. Aesthetics in design of irrigation structures.
7. Construction planning of dams. Dewatering. Cofferdams.
8. Design of canal falls and regulators, cross drainage works, canal outlets and river training works.

ADVANCED PUBLIC HEALTH ENGINEERING DESIGN

1. Recent advances in wastewater treatment technology. Developments in Physical, Chemical and Biological treatment processes.
2. Molecular diffusion of mass in binary systems. Statistical theory of diffusion. Longitudinal dispersion.
3. Design of water treatment and wastewater treatment units.
4. Industrial wastewater treatment : Pre-treatment methods. Centrifugation and filtration. Microstrainers. Evaporation and concentration. Distillation. Neutralization. Liquid-solid separation. Biological oxidation. Removal of Specific components. Activated carbon adsorption. Reclamation of wastewater effluents. By product recovery. Ion exchange systems. Design of waste water treatment units from typical industrial wastes such as pulp and paper, woollen mill, steel and petroleum industries.

WATER RESOURCES SYSTEMS

Introduction to the fundamentals of water resources systems analysis, involving the determination of the optimal dimensions.

**TEACHING AND EXAMINATION SCHEME FOR M.E. (CIVIL) ENVIRONMENTAL ENGINEERING
COURSE (PART TIME)**

S.No.	Subject	Teaching Scheme		Examination Scheme Marks				
		Working hours per week Lectures, Prac. & Total		Duration	Paper	Prac. & sessional	Total	
1	2	3	4	5	6	7	8	9
FIRST SEMESTER EXAMINATION								
1.	Applied Mathematics	4	2	6	3	100	---	100
2.	Chemistry for Environmental Engineering	3	1	4	3	100	50	150
3.	Fluid Mechanics & Hydrology	3	1	4	3	100	50	150
Total (1st Semester)		10	4	14		300	100	400
SECOND SEMESTER EXAMINATION								
1.	Air and Noise Pollution	3	1	4	3	100	50	150
2.	Applied Micro-biology & Environmental Health	3	1	4	3	100	50	150
3.	Project	---	3	3	---	---	150	150
Total (2nd Semester)		6	5	11	---	200	250	450

THIRD SEMESTER EXAMINATION

1. Systems Engg., & Solid waste Management	3	1	4	3	100	50	150
2. Environmental Engg., I	3	1	4	3	100	50	150
3. Seminar	—	3	3	—	—	100	100
Total (3rd Semester)	6	5	11	—	200	200	400

FOURTH SEMESTER EXAMINATION

1. Environmental Engg., II	3	1	4	3	100	50	150
2. Elective ; Two of the following :							
(i) Environmental Quality Management	3	1	4	3	100	50	150
(ii) Industrial Waste Treatment	3	1	4	3	100	50	150
(iii) Urban Planning							
(iv) Ground Water Pollution							
Total (4th Semester)	9	3	12	—	300	150	450

FIFTH SEMESTER EXAMINATION

1. Thesis/Dissertation	—	12	12	—	—	300	300
Total (5th Semester)	—	12	12	—	—	300	300
Grand Total :	31	29	60	—	1000	1000	2000

**M.E. (Civil) Water Resources Engineering—Common paper,
OR M.E. Environmental Engineering.**

Applied Mathematics :

- I. Vector Calculus : Vector and Scalar point functions. Gradient, curl and divergence.
- II. Complex variables : Cauchy-Riemann equations. Analytic and Harmonic functions. Taylor's and Laurent's series. Cauchy and Residue theorems alongwith their application. Conformal mapping by elementary functions.
- III. Numerical Methods :
 - (i) Interpolation and Approximation : Finite differences, difference operators. Lagrange's interpolation formula. Newton's forward and backward difference formulae. Bessel's and Stirling's interpolation formulae. Numerical differentiation. Numerical Integration—Simpson and Newton--Cotes Methods.
 - (ii) Matrix Methods : Solution of linear equations. Matrix inversion. Eigen values.
 - (iii) Numerical solution of differential equations. Modified Euler method. Runge--Kutta fourth order method. Milne's predictor--corrector method. Numerical solution of Laplace's equation in two dimensions by Liebmann's process.
- IV. Transforms calculus :

Definition and simple properties of Laplace and Fourier transforms, their applications to the solution of ordinary and partial differential equations with special reference to Laplace in two variables wave and diffusion equations in one variable.
- V. Probabilities and sets. Discrete sample spaces. Postulates of probability. Conditional probability. Probability Distributions. Binomial and Poisson distributions Multivariate probability distribution Probability densities and distribution functions. Normal and chisquare distributions. Multivariate probability densities. Mathematical expectations and moments of discrete and continuous variables.

Chemistry for Environmental Engineering :

1. Elements of water chemistry : Solution and suspension of impurities, solutions and solubility. Solutions of ionised, solutes chemical equilibria in solution. Acid-base equilibria. Oxidation—Reduction Processes Electrode potentials. Rates of chemical reactions. Absorption isotherms. Electrokinetic properties of colloids. Stability and coagulation of colloids.

2. Basic concepts of Bio-chemistry : Enzymes. Buffers. Bio-chemistry of Carbohydrates. Proteins. fats and oils.
3. Basic concepts of colloid chemistry : General properties of colloids. colloidal dispersions in liquids. colloidal dispersions in air.
4. Basic concepts of Radio-chemistry : Atomic structure. Natural Radioactivity. Atomic transmutations and artificial radio-activity. Nuclear Fission. Nuclear fusion. Use of radio-active materials as tracers.
5. Analysis of water and waste water : Physical, chemical and bacteriological tests commonly used for the analysis of water and waste water.

Fluid Mechanics and Hydrology :

Mathematical foundations of Fluid Mechanics. Historical development.

Ideal fluid theory. Foundations of flow analysis. Basic Laws for systems and control volumes. Continuity equation. Euler's equations. Bernoulli equation. Linear momentum equation. Application. Vector notation.

Incompressible irrotational flow. Circulation vorticity velocity potential. stream function and flow-nets.

Real fluids. Viscosity and its significance. Stokes velocity potential. stream function and flow-nets. viscosity law. Flow in a circular pipe. Creeping motion. Parallel flow past a sphere Stokes law for terminal settling velocity and Oseen correction.

Elementary concept of boundary layer theory. Separation. Vortex trail.

Introduction to turbulent flow. Eddy viscosity. Reynolds' stresses and significance.

Pressure distribution around immersed bodies. Calculation of Drag and lift. Form drag, skin friction drag, total.

Dimensionless numbers. Eulers Reynolds. and Froudes. numbers and their significance.

Meteorology : Atmosphere as a vehicle for transfer of water humidity. precipitation. evaporation. Weather forecasting. Determination of the total rainfall on an area of area. intensity. duration of maximum rainfall. Probable maximum precipitation.

Measurement of Surface Flow : Methods of measurement and instruments: velocity and area. chemical dilution. gauging structures. The stage discharge relation. Elementary concept of losses and max flood.

Occurrence of ground water. Porous materials. Darcy's law. Permeability and porosity. Anisotropy. Hydraulics of ground water. Differential equations of flow.

Potential Flow : flownets, boundary conditions. Steady State flow. Confined aquifer. Unconfined aquifer.

Mechanics of well flow and pumping tests : Steady and unsteady flow in confined and unconfined aquifers. Boundary effects and methods of images. Leaky aquifers. Partial penetration of wells. Interference of well. Yield of wells.

Ground water development : Tubewells. Artificial recharge. Conservation. Ground water prospecting. Groundwater level fluctuations. Salinity of ground water. Ground water pollution. Infiltration galleries.

Air and Noise Pollution :

(a) Air Pollution:

Meteorological and topographical effects on air movements. fuels and atmospheric pollutants: sources and diffusion of SO_2 , CO , NO_x smoke. Particulates and heavy metals in air. Sampling techniques and analysis of different gases and solid particulates. effects of air pollution of human health. control techniques. air quality criteria and case study.

(b) Noise Pollution:

Introduction to the assessment and measurement of sound. Environmental effects and assessment of noise. Basic principles of noise control. Noise control by acoustical treatment. Industrial and construction noise. Aircraft and airport.—noise. Highway and Rail traffic noise. Control of noise. Effective noise management.

Applied Micro-biology and Environmental Health :

(a) Applied Microbiology :

(i) Fundamentals of Sanitary Micro-biology : Bacteria. (forms, cell structure, chemical composition, Metabolism) Algae (identification, classification, culture media metabolism). Protozoa. Rotifers. Cestaceans. Worms and Larvas. Energy concepts in biodegradation. Synthesis, growth and death of Micro-organisms. Population dynamics.

(ii) Applied Microbiology : Pathogenic micro-organisms in water, milk and food. Parasitism, parasitic biochemistry, toxin production, pathogen survival, control of pathogens. Stream pollution. Micro-organisms of

trickling filter. activated sludge, oxidation ponds, anaerobic digestion and refuse disposal. Air microbiology.

(b) Environmental Health :

Introduction to Public Health and environmental health. Environmental health programmes and organization. Epidemiology and control of communicable diseases. Toxicology. Environmental health planning. Radiological health.

Systems Engineering and Solid Waste Management :

(a) Systems Engineerings :

- (1) Use of computers : Analog and digital computers. Basic principles of Fortran programming.
- (2) Basic concepts of a system and systems engineering. Problem formulation. Limitations of systems engineering. Optimization methods.
- (3) Linear Programming : Fundamental properties. Graphical and Simplex methods. Simplex tableau. Duality theory. Parametric linear programming linear. programming. *The Transpotration problem.*
- (4) Network Analysis : C.P.M. and PERT.
- (5) Dynamic Programming : Characteristics and formulation and solution of simple problems.
- (6) Stimulation : Basic principles. Generation of Random numbers.
- (7) Decision Theory : Decision under certainty, under risk and under uncretainty.

(b) Solid Waste Management :

Solid wastes. solid waste management systems. Engineering principles of storage, collection, transportation and processing of solid wastes. Recovery of resources. Hazardous wastes. Management Issues : Planning in solid waste management, collection alternatives, transport options. Mathematical optimization models for solid wastes management. Policies for solid waste management.

Environmental Engineering-I :

1. Unit Operations : Fluid Transport in open conduits. Mixing. Sedimentation. Flow through beds of solids. Vacuum filtration. Gas transfer. Adsorption.

2. Unit Processes : Water stabilization. Coagulation. Disinfection. Ion exchange. Electrodialysis. Defluoridation and desalination of water. Taste and odour control. Biological oxidation principles.
3. Kinetics of plugflow and completely mixed reactors. Batch processes. Activated sludge processes and its modification. Oxidation ditches and aerated lagoons. Trickling filters. Waste stabilization pond
4. Aerobic and Anaerobic digestion of sludge. Handling and disposal of digested and undigested sludge.
5. Disposal of sewage by dilution self-purification of streams. Disposal of sewage on land. Sewage farming.

Environmental Engineering II :

- (1) Principles of water quality management.
- (2) Water treatment Plant Design : General design considerations Types of Plants. Detailed design of various units such as : Aeration, Rapid Mixing and Flocculation.
- (3) Design of water distribution system. Hardy cross methods.
- (4) Design and Construction of sanitary and Storm Sewers :, Surveys and investigations, Quantity of Sanitary sewage. Quantity of storm water. Design of Sewer Systems. Man-holes Sanitary Sewage Diversion and Storm water overflow devices. Siphons. Materials for sewer construction. Construction methods.
- (5) Design of wastewater and stormwater puming stations.
- (6) Sewage treatment plan design : Detailed design of various units of sewage treatment plants.
- (7) Principles of industrial waste treatment. Collection and disposal of solid wastes.

Elective Papers :—Any two of the following :

Environment Quality Management :

Aim and objectives of different monitoring programmes. global environmental monitoring system (GEMS). national monitoring programmes: water monitoring programmes. objectives and various systems. soil monitoring and survey, management of soil erosion. acidity and alkalinity etc. Basic principles of environmental management. manpower and training programmes, legal aspects and economic aspects: national environmental policies. regional and international issues and their implications. Implementation of policies and organization of management agencies: national, state

and local levels. Mathematical models for environmental quality management.

Environmental impact assessments and statements. Elements of environmental impact analysis. Impact assessment methodologies.

Industrial Waste Treatment :

1. Industrial Wastewater treatment technology
2. Industrial wastewater treatment equipment.
3. Water Pollution control in the following industries.
 - (i) Textiles and synthetic fibres.
 - (ii) Metallurgical
 - (iii) Petroleum
 - (iv) Chemical and mineral
 - (v) Paper and pulp
 - (vi) Milk and dairy
4. Advanced methods of waste treatment for various industries.

Urban Planning :

1. Environmental Effects of Urbanization : Energetics of the biosphere. Human Processes in the biosphere. Natural climatic changes. The climate of cities. Hydrologic effects of the urban land use.
2. (a) The Transportation system and its Environment : Transport costs. transportation demand, transportation network flows and environmental impacts. Transportation goals and objectives.
 (b) Engineering design, planning and management applications in Transportation : Decision Making in Transportation Management and Planning. Long-range transportation planning. Location and design, system operation and management.
3. Planning of buildings and other facilities in the urban area from the considerations of managing the air resources, water resource management, solid waste management and noise pollution.
4. Slum clearance and improvements, problems. Some case studies.

Groundwater Pollution :

1. Water Quality : Quality of groundwater resources. Dissolved constituents, suspended material, classification of water.

Water quality criteria for drinking, industrial & agricultural uses.

2. Sources of pollution : Various sources of groundwater pollution. Activities generating contaminants. Hazardous wastes.
3. Principles of Pollutant Movement and Attenuation in the Ground. Groundwater movement in the saturated zone. Factors affecting pathogen movement. Factors affecting pathogen survival.
- 4(Nitrate Pollution of groundwater. Natural occurrence of nitrates. Sources related to Man's Activities.
5. Contaminant hydrogeology : Theory, Methods and Techniques
6. Management of groundwater quality : general principles. monitoring. Selection of parameters for monitoring. Design of monitoring systems. Critical path monitoring. Aquifer protection schemes. Techniques for the improvement of contaminated groundwater. Economic considerations in groundwater quality management.

TEACHING AND EXAMINATION SCHEME FOR PART-TIME M.E. COURSE IN STRUCTURAL ENGINEERING TEACHING SCHEME

	Theory	Course work (including practicals & sessions)
<i>1st SEMESTER :</i>		
1. Mathematics (Structures)	4 hours	2 hours
2. Foundation and Retaining Structures	4 Hours.	2 hours
3 Theory of Elasticity	4 hours	2 hours.
Total :	<u>12 hours</u>	<u>6 hours.</u>
<i>2nd Semester :</i>		
1. Instrumentation	4 hours	2 hours
2. Materials Technology (Structures)	4 hours	2 hours
3. Elective-I (Any one of the following)		
(a) Theory of plates & Shells	4 hours	2 hours
(b) Elastic Stability		
Total :	<u>12 hours</u>	<u>6 hours</u>

3rd Semester :

1. Advance Analysis of Structures	4 hours	2 hours
2. Elective-II	4 hours	2 hours
Any one of the following :		
(a) Advanced Design of Structures		
(b) Structural Dynamics		
3. Elective-III (Any one of the following)	4 hours	2 hours
(a) Prestressed Concrete		
(b) Computer Methods in Structural Engineering		
Total :	12 hours	6 hours

4th Semester :

1. Project		6 hours
2. Seminar		6 hours
Total :		12 hours

5th Semester :

Dissertation		6 hours
Grand Total :	36 hours	36 hours

TEACHING AND EXAMINATION SCHEME FOR PART-TIME
M.E. COURSE IN STRUCTURAL ENGINEERING*Examination Scheme*

	Paper duration hours.	Paper marks	Course marks	Total marks
<i>Ist Semester :</i>				
1. Mathematics (Structures)	3	100	50	150
2. Foundation & Retaining Structures	3	100	50	150
3. Theory Elasticity	3	100	50	150
Total :				450
<i>IInd Semester :</i>				
1. Instrumentation	3	100	50	150
2. Materials Technology (Structures)	3	100	50	150
3. Elective-I (Any one of the following)	3	100	50	150
(a) Theory of Plates and Shells.				
(b) Elastic Stability				
Total :				450

IIIrd Semester :

1. Advance Analysis of Structures	3	100	50	150
2. Elective II (Any one of the following)	3	100	50	150
(a) Advanced Design of Structures				
(b) Structural Dynamics				
3. Elective-III (Any one of the following)	3	100	50	150
(a) Prestressed Concrete				
(b) Computer Methods in Structural Engineering				

Total : 450

IVth Semester :

1. Project	150
2. Seminar	100
	<hr/> 250

Vth Semester :

Dissertation	400
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Grand Total 2,000

MATHEMATICS :**1. Statistics:**

Elementary theory of probability. Theoretical probability distributions—Binomial, Normal and Poisson's distributions, Chi-square-test of goodness of fit.

Curve fitting, methods of least squares. Bivariate distribution, linear regression, and correlation.

2. Numerical Methods :

(i) Interpolation and Approximation :— Finite differences, difference operators. Lagrange's interpolation formula. Newton's forward and backward difference formulae. Bessel's and Stirling's interpolation formulae, Numerical differentiation. Numerical Integration—Simpson and Newton-Coates methods.

(ii) Matrix Methods : Solution of linear equations. Matrix inversion. Eigen values.

(iii) Numerical solution of differential equations : Modified Euler method. Runge-Kutta fourth order method. Milne's predictor-corrector method.

Numerical solution of Laplace's equation in two dimensions by Leib-mann's process.

3. Complex variables—Cauchy-Reimann's equations. Analytic and Harmonic functions. Taylor's and Laurent's series. Cauchy and Residue theorems along with their applications. conformal mapping by elementary functions.

FOUNDATION ENGINEERING & RETAINING STRUCTURES

Bearing capacity of soil. Theory of consolidation and the settlement of structures. Rational design of footing and rafts on different types of soils. Foundations in made up and reclaimed area

Pile foundations. classification. bearing capacity of piles and pile groups. Constructions : techniques. Pile spacing and grouping: subjected to lateral forces.

Foundations in expansive soils. Foundations of reciprocating machines. power hammers and heavy electrical machines.

Earth pressure theories—Rankine and Wedge Theory. Modern concepts. Graphical and other methods of determining active and passive pressures on various types of retaining walls under different condition of back fill. Stability analysis of retaining walls. Pressure on sheet piling and bulkheads. Pressure on conduits. pipes and tunnels. Design of bridge abutments.

THEORY OF ELASTICITY

Historical introduction: components of stress and strain and their relationship: Hooke's law.

Analysis of stress and strain in three dimensions: General theorems: Equation of equilibrium.

Conditions of compatibility: Boundary conditions. Principal stresses. stress ellipsoid. Determination of Principal stresses. maximum shear stresses. Principal axes of strain. Rotation. Measurement of surface strain. Strain rosettes. plane stress and plane strain problems.

Two dimensional problems in rectangular co-ordinates. Solution by polynomials. Saint venant's Principle. Determination of displacements. Elementary problems on beams & cantilevers.

Two dimensional problems in polar co-ordinates. General equation in polar co-ordinates: Axisymmetric stress distribution. Curved bars. Strain components in polar co-ordinates. Elementary problems.

Strain energy methods. Principle of virtual work. Castigliano's Theorem. Principle of least work. Applications of strain energy methods.

Torsion of prismatic bars, Elliptical cross-section, other elementary solution, Membrane analogy. Torsion of rectangular bars and rolled sections. Use of soap film in solving torsion problems. Hydro-dynamic analogies, Torsion of hollow shafts and thin tubes.

INSTRUMENTATION (STRUCTURES)

Model Analysis: Principle of similitude. Methods of strain measurement--mechanical, electrical and optical gauges, osciloscope: Methods of deformation measurements, Begg's deformeter, Electrical circuits for single gauges and resetes-Use of oscilloscope for balancing and measurement of transient strains. Electrical analogy for seepage in soils, for stress distribution in solids and other potential flow problems.

Measurement of ground vibrations--Siesmographs Dynamics recorders.

Pressure cells for study of stresses.

Photo elasticity--Principles--Two dimensional photo elasticity for model studies of structures.

Brittle coatings

Moire fringe method.

TECHNOLOGY (STRUCTURES)

Materials :

Structure of solids, binding in solids. Crystals, imperfections and dislocations in various structures. Influence of structure on mechanical behaviour of materials.

Mechanical behaviour of steel; Stress-strain properties in tension in elastic and plastic region, Static stress strain properties in bending, shear and combined stresses. Effect of stress concentration on static mechanical properties. Impact properties Fatigue properties.

Mechanics of concrete: Strength and deformation of concrete in compression and tension. Elasticity shrinkage creep and effect of sustained loading. Rheological and other models. Strength of concrete under combined stresses. Causes, mechanism and control of cracking in concrete. Application of fracture mechanics to concrete cracking and failure.

ELECTIVE PAPER :

Any one of the following :

THEORY OF PLATES AND SHELLS

Plates :

Pure bending of plates. Symmetrical bending of circular plates. Circular plates with concentric hole loaded symmetrically.

Rectangular plates. The plate equation. Boundary conditions. Navier solution and Levy solution for plate problems Sinusoidal, uniform, concentrated, triangular and partial loads, various edge-conditions.

Shells :

Definition of a shell. Classification of shells.

Membrane theory for shells of revolution—Typical cases. Loads with or without axial symmetry, distributed and edge loads.

Membrane theory for cylindrical shells—Tubes, pipes and barrel vaults.

Bending Theory for cylindrical shells—Beam Theory. Approximate theories of D.K.J., Finstewalder and Schorer.

Membrane theory for synelastie and anticlastic shells Analysis of folded plates—Elementary treatment only.

ELECTIVE PAPER :

ELASTIC STABILITY

Elastic stability of beam-columns. Differential equations for beam columns. Different kinds of loads and end conditions. Continuity in beam-columns. Deflections of beam-columns, effect of initial curvature.

Elastic buckling of bar and frames. Determination of critical loads. Large deflection of buckled bars, energy methods. Determination of critical load by successive approximations. Effect of shearing force on critical loads. Buckling of built up columns.

Pure torsion and non-uniform torsion of thin walled bars of open cross section. Torsional buckling by torsion and flexure.

Lateral buckling of beams and cantilevers. Lateral buckling of simply supported I-beams.

Buckling of thin plates. Calculation of critical loads. Buckling of rectangular plates compressed in one direction or along two orthogonal directions, various edge-conditions. Buckling of simply-supported rectangular plates under combined bending and compression. Buckling of rectangular plates due to shearing stress. Stability of rectangular plates reinforced by ribs.

ADVANCED ANALYSIS OF STRUCTURES

Methods of Analysis of Multistorey Frames :

Approximate methods of Analysis for horizontal loads ; Portal method. Cantilever method. Factor method. Vertical loads—Substitute frame method. Kani's Method.

Application of matrices to the solution of frames; Stiffness matrix, Flexibility matrix, plane frames, Space frames.

Numerical Methods :

Newmark's method for the solution of beams--Beams with varying moment of inertia, simple cases of determinate beams. Influence Lines; Finite difference technique: Application to beams with simply supported, fixed and free end conditions. Solution of elementary plate problems. Analysis of column, Elementary treatment of beams on elastic foundation.

ELECTIVE PAPER-II :

Any one of the following :

ADVANCED DESIGN OF STRUCTURES

Concrete Structures :

Ultimate load Method : Design of members in bending according to methods given by I.S. Code, British code and A.C. I. Behaviour of members in bending under ultimate load tests. Brief Review of Research.

Ultimate load method for design of members in shear. Different code provisions.

Design of members for torsion—elastic method, ultimate load methods.

R.C. Slabs—yield line theory, Hillerberg strip method.

Steel Structures :

Discussion of I.S. Code provisions for design giving the national basis of the provisions.

Design of transmission towers.

Plastic method of analysis and design of steel structures

Beams and frames including gables.

STRUCTURAL DYNAMICS

Vibratory systems and motions, simple harmonic motion, degrees of freedom.

Systems with one degree of freedom: Undamped system, free and forced vibrations. Dynamic load factor. Different load pulses. Damped systems, free and forced vibrations. Response to a pulsating force of damped and undamped systems.

Lumped mass multidegree systems: Natural frequencies and characteristic shapes. Stodola--Nianello procedure for natural frequencies, and characteristic shapes. Rayleigh method for

natural frequencies. Model analysis of multidegree systems. Multistory rigidframes subjected to lateral loads.

Structures with distributed mass and load: Simple span., beams. normal modes of vibration. Forced vibration of beams. Plates or slabs subjected to normal loads.

Approximate design methods: Beams and one way slabs. two way slabs. Sat slabs and frames. Multidegree systems.

ELECTIVE PAPER III—PRESTRESSED CONCRETE

Presteressing methods—steel for prestressing-concrete for prestressing—prestressing losses—Analysis and design of numbers for flexure, shear and bond.

End blocks-deflection of members.

Ultimate load method for members in flexure and shear.

Continuity in flexural members—Analysis and design.

Composite construction. Partial Prestressing.

Water Retaining Structures.

Load Balancing Method.

COMPUTER METHODS IN STRUCTURAL ENGINEERING

(Syllabi to be announced later on)

M.E. PART TIME COURSE IN ELECT. ENGG.

	Hrs/week	Exam. Hrs.	Max. Marks.
<i>First Semester</i>			
A. Written Papers :			
1. Mathematics	3	3	100
2. Network Theory	3	3	100
B. Sessional & Course Work :			
1. Mathematics	2	—	50
2. Network Theory	2	—	50
	<hr/> 10	<hr/> —	<hr/> 300
<i>Second Semester</i>			
A. Written Papers :			
1. Power system Analysis	3	3	100
2. Power System Stability	3	3	100
B. Sessional & Course work :			
1. Power System Analysis	2	—	50
2. Power System Stability	2	—	50
	<hr/> 10	<hr/> —	<hr/> 300

*Third Semester***A. Written Papers :**

1. Elective I (any one of the following) :			
(a) Digital Electronics	3	3	100
(b) E.H.V. AC/DC Transmission			
(c) Power System Planning & Reliability.			
2. Operation & Control of Power System.	3	3	100

B. Sessional & Course work :

1. Elective I	2	—	50
2. Operation & Control of Power	2	—	50
3. Seminar	2	—	100
	<hr/> 12	<hr/> —	<hr/> 400

*Fourth Semester***A. Written Papers :**

1. Advanced Relaying & Switchgear.	3	3	100
2. Elective II (any one of the following) :			
(a) Power Electronics	3	3	100
(b) Instrumentation			
(c) Transients & H.V. Engg.,			

B. Sessional & Course work :

1. Advanced Relaying & Switchgear.	2	—	50
2. Elective II	2	—	50
3. Project	5	—	150
	<hr/> 15	<hr/> —	<hr/> 450

*Fifth Semester***A. Written Papers :**

1. Computer Methods in power Systems.	3	3	100
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B. Sessional :

1. Computer Methods in Power Sysms.	2	—	50
Dissertation	—	—	400

Total :	<hr/> 5	<hr/> —	<hr/> 550
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Grand Total :	<hr/> —	<hr/> —	<hr/> 2,000
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M.E. COURSE IN ELECTRICAL ENGINEERING

Mathematics

Numerical Methods :

- (i) Interpolation and Approximation :—Finite differences, difference operators. Lagrange's interpolation formulae. Newton's forward and backward difference formulae. Bessel's and Stirling's interpolation formulae. Numerical differentiation. Numerical Integration—Simpson & Newton—Cotes methods.
- (ii) Matrix Methods : Solution of linear equations. Matrix inversion. Eigen values.
- (iii) Numerical solution of differential equations : Modified Euler method. Runge-kutta fourth order method. Milne's predictor-corrector method. Numerical solution of Laplace's equation in two dimensions by Liebmann's process.

Computer Programming :

- (i) Arithmetic operations and expressions. Real & integer constants and variables. Input/output statements.
- (ii) Control statements : GO TO, arithmetic IF, logical IF, computed GO TO, DO Loops and continue statements.
- (iii) Subscripted variables : Single, double and multiple subscripts. The dimension statement.
- (iv) Sub-routines and Functions : Call Statements, Data and Block Data Statements. Fortran Function, Function sub-programmes.
- (v) Programming of simple problem in Electrical Engineering

PAPER—NETWORK THEORY :

1. Network Topology : Network Geometry, Incidence Matrix Tie Set Matrix and loop currents, cut set matrix and node pair potentials, Properties of cut set and tie set matrices, Duality. Planar and Nonplanar Networks, Branch Parameter Matrices, Kirchhoff's Equilibrium Equations on loop basis, Equilibrium Equations on the Node Basis, Two ports and equivalent two ports. Matrix Formulation of Two part Network Relationships.

2. Network Functions : Driving point and transfer functions, Representation of Network Functions—Representation by Poles and Zeros. Frequency Response Function, Bode Diagrams, Minimum Phase and non-minimum phase transfer functions, complex loci. calculation of network function from (i) a given magnitude, (ii) a given angle, and (iii) a given real part : Integral relationship between Real and Imaginary parts.

3. Elements of Reliability : Hurwitz polynormial, positive Real Functions, L--C Immittance Functions, R--C and R--L Driving point impedances.

4. Image Parameters : Characteristic Impedance, Propagation constant : Effect of Terminal impedance Mismatch.

5. Network Analysis using Laplace Transformers : Response of series and parallel R--L, R--C, and R--L--C circuits to :

1. Step input
2. Exponential driving source
3. Sinusoidal driving source.

POWER SYSTEM ANALYSIS

Fault Analysis :

Positive, negative and zero sequence equivalent circuits of lines, transformers, induction machines and synchronous machines. Analysis of shunt faults, effect of neutral grounding. Analysis of series faults and simultaneous faults. Fault calculation on actual systems. Introduction to Alpha Beta and zero components.

Transformers :

Multi-winding transformers and their equivalent circuits. Analysis of unbalanced loading and short circuit of transformers.

Unbalanced operation of 3-phase Induction motors :

Characteristics with application of positive sequence voltages to the stator--characteristics with application of negative sequence voltage to the stator--characteristics with application of both positive and negative sequence voltages to the stator. Application of unbalanced voltages to the stator. Operation with open circuited stator phase--unbalanced impedances in the rotor circuits--operation with open circuited rotor phase.

Synchronous Machines :

Short circuit currents and reactances of a synchronous machine. Modelling of synchronous machine at no load and symmetrical load under steady state conditions. Sequence impedances of synchronous machines.

POWER SYSTEM STABILITY

Modelling of salient pole machine, wound rotor machine, lines, transformers and loads under steady state and transient conditions. Time constants.

Steady State and transient State Stabilities their definitions and methods of determination: Steady state stability of a single machine connected to an infinite bus by the method of small oscillations, steady state stability of two machine and multi machine system without controllers. Equal area criteria of determining transient stability. Development of swing equation and its solution by step by step method. Euler's method of solving swing equation. Determination of critical clearing time. pre-calculated swing curves and their applications. Methods of improving steady state and transient stability. Generator reactance--Exciter ceiling voltage, inertia constant, damper winding, excitation control, fast acting circuit breakers and relays, synchronous condensers. Series compensation, neutral grounding, fast valving governors, autoreclosers.

DIGITAL ELECTRONICS

1. *Introduction*: Introduction & review of fundamentals of the Digital system, Number systems, efficiencies of no. system, various codes (coded decimal systems, cyclic codes, alphanumeric codes, error detection and correction codes), Ternary number system.

2. *Switching Algebra & Switching function* : Boolean Algebra and its theorems, various logic families. Applications of logic circuits.

3. *Systematic Reduction of Boolean Expressions* : Introduction, Shannon's theorem. Minterm & maxterm designation of switching functions, various representations of switching functions, Minimization for Boolean Function using Karnaugh's map and Quine McClusky method, circuit implementation of switching functions, Minimization of multiple output combinational switching circuits.

4. *Special Topics in combinational Logic Design* : Introduction, Decomposition of switching functions by different methods, Representation: Analysis, properties, different methods, Representation, properties and detection of symmetric functions, Analysis, properties, synthesis and realisation of threshold logic.

5. *Sequential Logic circuits* : Different types of flip flops; Different types of registers : shift Register, left right shift register. Serial and parallel shift registers, M.S. shift registers: Different types of counters: ripple counter, synchronous counter, updown counter, Modulo M counter, I.C. counter: Decoder and its application.. D/A and A/D converters.

6. *Introduction to Digital Systems* : Introduction Sampling, theorem, Amplitude quantization, Datahold circuits, Z transforms.

7. *Digital Filters* : Representation of input steady state sinusoidal response of linear discrete systems, various types of digital filters and their implementation.

EHV AC/DC TRANSMISSION

(a) E.H.V. A.C. Transmission :

Economics of Bulk Power transmission, problems associated with Bulk power transmission over long distances. S.I.L. and power limits of Transmission lines. Principles of Half-wave length and Quarter wave length Transmission lines. Tuning of transmission lines: Maximum power limits of Tuned lines. Methods for overcoming stability limitations and loading limitations of long lines. Series and shunt compensation.

Location of capacitors for compensation. Variation of No load receiving End and Midpoint voltage in a fully compensated line. Problems associated with series compensation, Protection of series capacitors. Voltage levels necessary for Bulk Power Transmission. Features of 400 KV lines, Future needs and voltage levels.

Corona: Basic nature, corona discharge mechanism. Corona loss in H.V. transmission lines. Effect of Bundle conductor, R.I. characteristics origin, effect of weather conditions, Effect of system voltage variation: Analysis of Radio noise. design considerations for acceptable levels of R.I. On E.H.V. Transmission systems. ..

(B) H.V. D.C. Transmission :

Brief history, choice of A.C. and D.C. systems (Economic point of view), comparison between A.C. & D.C. transmission for long distance bulk transmission, limitations of A.C. transmission. Advantages and disadvantages of D.C. Transmission. Qualitative description of various converter and inverter circuits. Complete D.C. link, Type of D.C. links. Control characteristics. Reactive power requirements and sources of reactive. Brief description of equipment at D.C. terminals.

General review of H.V.D.C. circuit breaker and measurement of H.V.D.C. quantities.

POWERS SYSTEM PLANNING AND RELIABILITY

Reliability concepts--Measures of reliability. Rules for combining probabilities. Mathematical expectation, Distributions. Reliability theory Series and Parallel systems. Markov processes.

Static generating capacity reliability evaluation.

Outage definitions, loss of load probability methods. loss of energy probability method. Load forecast, System Design and planning. Strategies for generation, transmission and distribution networks. Transmission System reliability evaluation--Average interruption rate method The frequency and duration method.

Interconnected systems generating capacity reliability evaluation introduction—The loss of load approach.

Reliability evaluation in two and more than two interconnected systems. Interconnection benefits.

OPERATION AND CONTROL OF POWER SYSTEMS

Economic operation and control of interconnected systems :-

Input-output curves and incremental rate curves of a power station. Effect of operating conditions. Conditions of minimum input in multifed systems. Optimum economy scheduling (Transmission losses neglected). development of Transmission loss formula coefficients. coordination of incremental production costs and incremental transmission losses for optimum economy. inter system contracts and organisational requirements.

Control of active and reactive power flow, voltage and frequency block diagram representation of computer control of interconnected systems and areas.

Load despatch Functions of the load despatcher. considerations for centralised control of system operations and requirements of the control load despatch office.

Principles of operation and performance of Automatic voltage regulators. Automatic synchronizing systems.

ADVANCED RELAYING & SWITCHGEAR

General Philosophy of System Protection : Causes of faults, the function of protective relaying, primary and back up protection. classification of relay schemes. Relay functional devices and characteristics:—Basic Summation, single input. Two input and multi-input. devices: practical devices in electromechanical and statics types: Relay characteristics employing these devices.

Overcurrent Protection : Various time-current characteristics and their applications.

Distance Protection :—Types of commonly used distance relays, (straight line and circular Characteristics): Phase fault and ground fault protection. Reach of relay. effect of arc resistance. power swings and power infeeds. Use of out of step blocking tripping and blinder relays. Multi-shot, single shot and instantaneous reclosing. Single pole versus three pole reclosing. Carrier-current-Pilot and Microwave.

Pilot Relaying : Directional comparison. Blocking Carrier, Carrier acceleration and carrier inter tripping schemes.

Phase comparison : Principle of operation and equipment.

Generator Protection : Stator protection phase and ground faults, stator inter turn faults; Rotor protection--Ground faults, Open, circuit and stator unbalanced currents.

Transformer Protection : Types of faults, Buchholz relays. E/F protection, Biased differential protection, Relay Solutions to the inrush current problem.

Bus Zone Protection : General principles, current and voltage differential protection, Back up protection.

Computer Applications to Protective Relaying : On-line and Off-line applications of digital computers to protection.

Switchgear design : multibreak and resistance switching.. Recovery and restriking voltages—Physical stresses in high circuit breakers--current rating capacity. Trends in high capacity high voltage circuit breakers, vacuum circuit breaking. SF_6 and D.C. switching. Testing of circuit breakers

POWER ELECTRONICS

1. **Power Semiconductor Devices :** Power transistor—SCR—construction—ratings—Switching on and switching off phenomena—Heat dissipation and heat sinks. Series and parallel combinations and protection.

2. **Firing Circuits :** Use of UJTs, Saturable reactors Schmitt triggers and blocking oscillator S--D.C. and A.C. switching. Switching off methods--Forced and natural commutation.

3. **Converters :** Principles of A.C. to D.C., D.C. to A.C., A.C. to A.C. and D.C. to D.C. converters--Basic circuits used in conversions.

4. **Control of D.C. Machines :** Using A.C. and D.C. Supply—Armature voltage control—Field Control—Regenerative control—Control of speed in either direction.

5. **Induction Motor and Synchronous Machine Application :** Frequency control by invertors and cycloconvertors--control of power in the induction motor rotor circuit--static excitation for alternators--Synch. machine voltage control.

INSTRUMENTATION

1. **Theory of Errors :** Accuracy of precision. Methods of reducing systematic errors in measurements. Statistical analysis of the random errors. Normal error curve. Estimation of error in computed results.

2. **Transducer Instrumentation :** Primary sensors, voltage and current generating analogue transducers, variable parameter analogue

transducers. Frequency generating and digital transducers. Transducer selection factors.

3. Digital Instrumentation : Introduction. Basic measurement system. Digital voltage Measurement. Frequency Measurement. Time Measurement. Digital Phasemeter. Digital Multimeter. Digital Displays.

4. Telemetry Systems :

(i) Introduction to Information Transmission: Basic Ideas.

(ii) Point to Point Telemetry : Basic Principles. pneumatic and electrical systems. voltage and current telemetry, impulse telemetry, impulse code telemetry.

(iii) Radio Telemetry : Basic Principles or A.M.--F.M. & P.C.M. systems.

5. Instrumentation associated with Power Plant : Centralised Control and measurement in Thermal. Hydro and Nuclear Power Plants.

6. Power Line Carrier Principles.

PAPER—TRANSIENTS & H.V. ENGINEERING

Lighting Over Voltages :

Origin and nature. Parameters of lightning discharge. Theoretical form of lightning current wave. Electromagnetic field of lightning canal. intensity of lightning activity.

Transient Phenomena in Transmission lines :

Wave terminology—development of wave equations. Terminal Problems. Lattice diagrams. Propagation of waves in a multiconductor system, multiple reflections of waves, Effect of impulse corona on transient phenomena. Natural oscillations of a section of a line.

Over-voltage Protection of Transmission Systems :

General characteristics of atmospheric over-voltages on transmission lines induced over-voltages on transmission lines, Direct stroke lightning in a line. without ground wires. Direct stroke of lightning in line with ground wires. Lightning Protection of transmission lines. Protective zones of lightning conductors. Permissible distances between the object to be protected and the lightning conductor. Protection of sub-station from lightning.

Internal Over-voltages :

Neutral grounding, over-voltage during single-phase ground faults in the system with isolated neutral. Over-voltages during disconnection of open lines. Resonance over-voltage.

Insulation Co-ordination :

Requirements in surge protection of lines and equipment :

PAPERS : COMPUTER METHODS IN POWER SYSTEMS

Incidence and Network Matrices :

Incidence matrices Primitive net work. Formation of network matrices.

Algorithms for Formation of Network Matrices :

Algorithms for formation of bus impedance matrix. Modification of the bus impedance matrix for change in the network. Derivation of loop admittance matrix from bus impedance matrix.

Three-phase Network : Three phase network elements, Transformation matrices. Incidence and network matrices for three phase bus impedance matrix. Modification of the three phase bus impedance matrix for changes in the network.

Short circuit studies -

Short circuit calculations for balanced three phase network using bus impedance matrix and loop impedance matrix.

Load flow studies :

Power system load flow equation solution techniques. voltage controlled buses. representation of transformers. The line control, load flow calculations and programme.

Load Forecasting :

Necessity. short term forecasting by preliminary analysis, medium term by field survey method, long term load forecasting by statistical method.

M.E. COURSE IN MECHANICAL ENGINEERING (PRODUCTION AND INDUSTRIAL ENGINEERING GROUP) TEACHING AND EXAMINATION SCHEME.

	Teaching Hours Per week	Exam. Hours.	Maximum. Marks.
FIRST SEMESTER :			
A. Written Papers :			
1. Mathematical Optimisation Techniques in Mechanical Engineering	3	3	100
2. Industrial Management	3	3	100
3. Design and manufacture of production Machines	3	3	100
4. Materials Technology (Mech.)	3	3	100

5. *Elective-I*

Any one of the following :—

- | | | | |
|---|---|---|-----|
| (i) Network Analysis and
Computerised Management | 3 | 3 | 100 |
| (ii) Reliability and
Maintenance Engg. | | | |
| (iii) Elasticity & Plasticity
(Production) | | | |

15	500
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B. Course Work including Practicals & Sessionals :

6. Course work in Mathematical optimisation Techniques	2	50
7. Course work in Industrial Management	2	50
8. Course work in Design of M/c. Tools.	2	50
9. Course work in Materials Tech.	2	50
10. Course work in Elective-I	2	50
	10	250
	25	750

SECOND SEMESTER :

A. Written Paper :

- | | | | |
|---|---|---|-----|
| 1. Operation Research methods in Mechanical Engineering | 3 | 3 | 100 |
| 2. Work Study and Industrial Psychology. | 3 | 3 | 100 |
| 3. Instrumentation | 3 | 3 | 100 |

4. *Elective-II:*

Any one of the following :—

- | | | | |
|---|---|---|-----|
| (i) Product Design and Production | 3 | 3 | 100 |
| (ii) Design of Tools, Jigs & Fixture | | | |
| (iii) Project evaluation and management | | | |

12	400
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B. Course work including Practicals & Sessionals :

5. Course work in ORME	2	50
6. Course work in W.I.P.	2	50
7. Course work in Instrumentation.	2	50
8. Course work in Elective-II	2	50
9. Project/Special assignment	5	150
	13	350
	25	750

III SEMESTER :

1. Seminar	5	100
2. Dissertation	20	400
	25	500

Grand Total of Marks :**2000****PART TIME M.E. COURSE IN MECHANICAL ENGINEERING (PRODUCTION AND INDUSTRIAL ENGINEERING GROUP) TEACHING SCHEME :**

	Teaching hours per week.	Exam., hours.	Maximum marks.
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I SEMESTER :**A. Written Paper :**

1. Mathematics (Mech. Engineering)	3	3	100
2. Industrial Management	3	3	100
3. Design and Manufacture of Production machine.	3	3	100
	9		300

B. Course work including Practicals & Sessionals :

4. Course work on Mathematics	2	50
5. Course work on I.M.	2	50
6. Course work on D.M.P.M.	2	50
	6	150
	15	450

II SEMESTER :**A. Written Papers :**

1. Materials Technology (Mech.)	3	3	100
2. Operations Research Methods in Mech. Engg.	3	3	100
3. <i>Elective-I:</i>			
(i) Network Analysis and Computerised Management	3	3	100
<i>Or</i>			
(ii) Reliability and Maintenance Engineering			
<i>Or</i>			
(iii) Elasticity and Plasticity (Production)			
	9		300

B. Course work including Practicals & Sessionals :

4. Course work in M. Technology (Mech.)	2	50
5. Course work in O.R.M.	2	50
6. Course work in Elective-I	2	50
	6	150
	15	450

III SEMESTER :**A. Written Paper :**

1. Work study and Industrial Psychology	3	3	100
2. Instrumentation (Mech.)	3	3	100
3. <i>Elective-II :</i>	3	3	100
(i) Product Design & Production Management			
<i>Or</i>			
(ii) Design of Tools Jigs and Fixtures.			
<i>Or</i>			
(iii) Project Evaluation and Management			
	9		300

B. Course work including Practicals & Sessionals :

4. Course work in W.I.P.	2	50
5. Course work in Inst.	2	50
6. Course work in Elective-II	2	50
	<hr/> 6	<hr/> 150
	15	450
	<hr/>	<hr/>

IV SEMESTER :

1. Seminar	5	100
2. Project/Special Assignment.	10	150
	<hr/> 15	<hr/> 250
	<hr/>	<hr/>

V SEMESTER :

Dissertation	15	400
	<hr/>	<hr/>
Grand Total of marks :		2000
	<hr/>	<hr/>

**PART TIME M.E. (MECHANICAL ENGINEERING)
(PRODUCTION AND INDUSTRIAL ENGINEERING GROUP)****FIRST SEMESTER :****PAPER : 1 MATHEMATICS (MECH.) 3L+2P****1. Transform Calculus :**

Definition and simple properties of Laplace and Fourier transforms, their applications to the solution of ordinary and partial differential equations with special reference to Laplace. wave and diffusion equations.

2. Statistics and Probability :

Elementary theory of probability The critical probability of distributions. Binomial, Normal and Poisson distributions. Chisquare-Test of goodness of fit.

3. Complex Variables :

Functions of a complex variable. Cauchy-Riemann conditions. conformal mapping. Line integral in complex domain. Cauchy's theorem. Cauchy integral formula. Taylor's, Laurent's series.

4. Tensor Analysis :

Definition of tensors, transformation of co-ordinates. contravariants and covariant vectors addition and multiplication of tensors.

inner product fundamental tensors. Christoffel symbols, covariant differentiation.

5. Matrix Methods :

Solution of linear equations. Matrix inversion. Eigen values.

FIRST SEMESTER :

PAPER: 2 INDUSTRIAL MANAGEMENT 3L+2P

1. Marketing Management : Market Research.
Forecasting and Study.
2. Industrial Financing : Financial and Budgetary.
Control. Accounting System.
Use of Computers.
3. Cost Classification : Social. Production Costs.
Break-even analysis. nature
and classification of Costs.
4. Cost Accounting : Cost Control. Cash Flow Ana-
lysis. Financial Evaluation of
New Projects. Management
of Money to achieve objectives.
5. Management—Concept and Theory : Analysis and resolution of
complex problems in business
policy of organisation. Legal
and Social Responsibilities of
Management.
6. Materials Management : Inventory. models and Inven-
tory Controls. Purchase Policy.
Store keeping.

FIRST SEMESTER :

PAPER : 3 DESIGN AND MANUFACTURE OF PRODU- CTION MACHINES :

Design of Machine Tools :

- (i) Machine tool drives: Mechanical drives. stopped and
stepless drive arrangements. Design of speed, feed and
kinematic arrangements of a machine tool.
- (ii) Modern Trends in design and construction of machine
tools.

- (iii) Hydraulic drive: Design and performance characteristic of pumps, motors and valves. Hydraulic circuits and control systems.
- (iv) Electrical drive: Selection of suitable types of electric motors, their characteristics and devices for speed regulation and control.
- (v) Construction and Design of Beds, frames, guides columns, power screws, table supports and slides from strength and rigidity point of view. Elimination of vibration and chatter.
- (vi) Spindle bearings and lubrication : Spindle design.
- (vii) Pneumatic controls--pneumatic holding devices air circuits.
- (viii) Application of servo-mechanism and controlling systems.
- (ix) Programme control and numerical control.

Manufacture of Production Machines :

- (i) Basic Manufacturing facilities.
- (ii) Superfinishing facilities
- (iii) Standardization of unit assemblies.
- (iv) Building of special purpose machines and transfer streets.

SECOND SEMESTER :

3L + 2P

PAPER—I : MATERIALS TECHNOLOGY MECHANICAL :

- (i) Review of properties and specifications of common production materials.
- (ii) *Fatigue*:
 - (a) Theories of fatigue, crack initiation and propagations.
 - (b) Design of important components of machines with various fatigue design factor.
 - (c) Influence of various manufacturing on fatigue strength.
 - (d) Design for limited life statistical considerations, cumulative damage theory :
- (iii) *Creep* :
 - (a) behaviour of metals during creep under low and high temperature.
 - (b) Stress relaxation applied to process.
 - (c) Thermal stresses

- (iv) Residual stresses :
 - (a) different manufacturing process comparative study.
 - (b) Measurement.
- (v) Elastic and brittle fracture design:
 - (a) Applications to machine tools.
 - (b) Wear theories and models. Surface wear.
- (vi) New Materials: Properties and compositions of plastics used in machine Tools & Allied products. whiskew. composite materials. GRF and RF plastics. ceramics and cermets.
- (vii) High Energy Rate Forming processes-explosive forming E.C.M.. E.S.M. U.S.M. D.B.M. A.J.M. P.J.M. L.B.M.. etc. operating parameters and applications.
- (viii) Computer Aided-manufacture (C.A.M.) : Numerically. controlled production machines. preprogramming.

SECOND SEMESTER:

3L+2P

Paper 2 : OPERATIONS RESEARCH METHODS IN MECHANICAL ENGINEERING:

- (i) Linear Programming : Graphical and Simplex methods. Duality and degeneration.
- (ii) Game Theory : Review of game theory. solution of (mxn) games by linear programming.
- (iii) Queueing Theory: Characteristics of queueing system. Single Server Model. Multiple Server Model.
- (iv) Dynamic programming : Fields of applications. Deterministic dynamic programming. Probabilistic dynamic programming.
- (v) Simulation : Role of random Numbers. Monte Carlo method. Mechanics of constructing and executing simulation. model.

SECONS SEMESTER :

3L—2P

Paper 3 : Elective-I (i)

(i) NETWORK ANALYSIS AND COMPUTERISED MANAGEMENT :

- (a) Network Analysis:
 - (i) Review of basic tools. Gantt Chart. Mile stone chart. Critical path analysis. PERT network. Analysis of

a network by CPM and PERT. Multiple time estimates. Frequency distribution. Reduction of data.

- (ii) Cost analysis--Updating, resources allocation, smoothing, crashing and cost control in networks. Kilbridge and Wester Method. Concept of PERT.
- (iii) Project cost by CPM and PERT.
- (iv) Computerized handling of large networks.

(b) Computerized Management :

- (i) Areas of computer application : Data processing method for accounting. Allocation of production resources for specified product mix, cost control procedures. Dynamic production programming, taking into account raw materials, product demand and profitability.
- (ii) Available subroutine packages for statistical and analytical problem.
- (iii) Computer usage: Computerised handling of project, production and maintenance networks.

SECOND SEMESTER :

3L+2P

Paper 3 : Elective-I (ii) :

RELIABILITY AND MAINTENANCE ENGINEERING

- (i) Failure categories and non-maintainable equipment. Product role in reliability theory. Redundancy, catastrophic and non-catastrophic failures. Reliability definition.
- (ii) Failure data analysis : Failure data, mean failure rate, mean time to failure, Mean time between failure, graphical plots, MTTF in terms of failure density. Reliability in terms of failure rate.
- (iii) Failure Models--Constant failure rate. Increasing and decreasing failure rate. The Weibull model. Chance of failure as a function of stress level.
- (iv) Inherent reliability and its degradation during design, manufacture and inspection. Methods of reliability, improvement. Reliability allocation.
- (v) Measurement of Statistical parameters related to reliability. Measurement of parameters of non-normal failure distributions.
- (vi) System reliability—series, parallel and mixed configuration. Methods of solving complex systems. Statistical considerations for factor of safety in design for reliability.

- (vii) Availability, maintainability and their relation with reliability. Theory of maintenance-preventive and repair types. Equilibrium of maintenance systems. Economics of preventive maintenance.

SECOND SEMESTER :

Paper 3 : *Elective-I (iii)*

3L + 2P

ELASTICITY AND PLASTICITY (PRODUCTION)

Elasticity :

Review of analysis of stress and strain in three dimensions. general theorem. equations of equilibrium. conditions of compatibility, boundary conditions.

Review of strain energy method. principle of virtual work, Castigliano's theorem. principles of least work.

Plasticity :

Review of Plastic strain, yielding, criteria of yielding, equivalent strain, plain strain, slip-line field, Hencky's equation, slip-lines at metal surfaces, metal flow inside a slip-line field, plane extrusion upper bound solution.

Analysis of stress in bar forging, calculation of forces in hot rolling, extrusion, drawing.

Applications :

Merchant analysis, Palmer and Oxley analysis. Elements of relationship : (Shaw, Cook, Oxley). force and stress, shear angle in oblique cuttings.

THIRD SEMESTER :

Paper I : WORK-STUDY AND INDUSTRIAL PSYCHOLOGY
3L + 2P

(a) Work study :

Analysis of processes, operation and motions. Design of work place and equipment, Macromotion and motion studies. Work measurement techniques. Stop-watch study. Performance rating method. standard data predetermined fundamental motions time standards. Work sampling. Allowances: personal, processes, fatigue and policy allowances. Application of psychological techniques to work measurement problems. Source of errors in work measurement and means of controlling them.

(b) Industrial Psychology :

Individual psychology, inter-personnel, inter-group and mass group behaviours in organisations. Morals and motivations. Industrial health. Safety measures and standards. Social Welfare activities.

(c) Personnel Planning :

Labour market. Recruitment, training and promotion and penal functions. Job education and merit rating. Wage incentive systems. Introduction to industrial acts and labour laws. Industrial disputes and trade unions. Collective bargaining works committees.

THIRD SEMESTER :**PAPER 2 : INSTRUMENTATION (MECHANICAL) 3L+2P****Section-'A' :**

- (i) Generalised measurement system fundamentals, calibration, sensitivity, and damping and dynamic characteristics.
- (ii) Basic detector transducer elements. Intermediate modifying systems. Terminating devices and methods.
- (iii) Determination of count and time.
- (iv) Measurement of dimensions, strain, force, torque and pressure.
- (v) Measurement of fluid flow, temperature, sound, vibration and shock.
- (vi) Process Instrumentation--introduction.

Section-'B' :

- (i) Advanced Metrology : Design of inspection gauges and measuring equipment. Automatic gauging. Multiple gauging. Measurement of alignment, surface finish, surface texture, gear and components of antifriction bearings
- (ii) Quality Planning for functional design: Assigning of tolerances and allowances, Prescribing finishing processes for given quality plan. Economic considerations.
- (iii) Design of quality measurement systems : Sampling methods, control charts, SQC., acceptance sampling. Zero-defect system.

THIRD SEMESTER :**Paper 3 :****3L + 2P****Elective-II (i) PRODUCTS DESIGN AND PRODUCTION MANAGEMENT :****(a) Product Design :**

- (i) Aesthetic design of product and packaging. Sales appeal, consumer appeals, ease of operation and maintenance.

- (ii) Research and development aspects. Legal liability aspects. Patent requirements and procedures.
 - (iii) Designing for production optimization in selection of material, minimization of production steps; maximum acceptable tolerance in dimensions, texture, heat treatment and surface finish. Introduction to computer aided design (C.A.D.).
 - (iv) Range design-similarity. Case of production: preferred numbers, selection of speeds.
 - (v) Product life, reliability criteria and standardization.
 - (vi) Time and cost aspect of product design from drafting board to mature product.
- (b) Production Management :
- (i) Costs for decisions--analytical methods.
 - (ii) Operations efficiency and improvement management. *normal distribution. work sampling.*
 - (iii) Layout of facilities--plant location and layout, materials handling.
 - (iv) Planning for Production—Planning, scheduling and control aspects.
 - (v) Line balancing.
 - (vi) Cost Control.
 - (vii) Human elements in production.
 - (viii) Integrated approach to production management.

THIRD SEMESTER :

Paper : 3

3L+2P

Elective-II (ii) DESIGN OF TOOLS, JIGS AND FIXTURES :

(a) Material Cutting Tools :

Tools materials, cutting fluids and their actions. Cutting forces, design of single point tools, form tools, drills and spot facers, reamers, milling cutters, broaches, thread cutting, rolling and chasing tools, Gear cutting and generating tools and abrasive tools.

Manufacture of cutting tools: Blanks machining, tool cutting, sharpening, manufacture and dressing and abrasive wheels.

(b) Forming Tools :

Methods for design of forging dies pressworking dies, extrusion dies, sheet metal cutting and bending knives and tools, manufacturing procedures for the above.

(c) **Jigs and Fixtures :**

Standardised quick clamping devices and locating devices, Materials for and design of jigs and fixtures. economic considerations.

(d) **Tooling layouts :**

For turrets, automatic presses and forges.

THIRD SEMESTER :

Paper 3 :

3L—2P

Elective-I (iii) PROJECT EVALUATION & MANAGEMENT :(a) **Project Evaluation :**

- (i) Socio-economic analysis of project Economic laws. investment, decision stages in economic appraisal. social value of product.
- (ii) Calculation of returns--basis for company objectives time value of money. rate of return.
- (iii) Appraisal Methods : Payback, projected rate of return. equivalent annual cost, Present value calculations, capitalised costs.
- (iv) Project Yield.—Calculation of yield, investment life. Effect of inflation, deflation and taxation. Analysis of risk and uncertainties. sensitivity analysis. Valuation. Replacement of assets. Minimum cost points. Expected rates of return for various types and sizes of projects.
- (v) Project Finance : Methods of financing. optimum project implementation programme. Financing by borrowing. Cash forecasting, cost of working capital. Annual cash flow statement for the project upto fifth year of production. Estimation of product payback period. Profit and Profitability
- (vi) Criteria for evaluation of projects such as social economic or national importance.

(b) **Project Management :**

- (i) Procedures for preparing feasibility reports. project reports.
- (ii) Project implementation. Decision stage. Mode of implementation. constructing contracting. Turn key projects. Stages of implementation.
- (iii) Preproduction phase: staffing pattern, erection, and commissioning of equipment.
- (iv) Trial production product appraisal process updating. quality plan updating.
- (v) Regular production: Profit improvement programme

APPENDIX-IV

FIVE SEMESTER SCHEME

PART TIME M.E. COURSE IN METALLURGICAL
ENGINEERING

TEACHING SCHEME

First Semester :	Lectures Hours/week	Practicals		
1. Mathematics	4	2		
2. Research techniques in Met.	4	2		
	8	4	÷	= 12
Second Semester :				
1. Advanced Metallurgical Kinetics	4	2		
2. Advanced Materials Science	4	2		
3. Seminar		2		
	8	6	÷	= 14
Third Semester :				
1. Elective-I*	4	2		
2. Elective-II*	4	2		
3. Seminar		2		
	8	6	÷	= 14
Fourth Semester :				
1. Elective-III*	4	2		
2. Elective-IV*	4	2		
3. Seminar		4		
	8	8	÷	= 16

Total contact hours with the students shall not be less than 12 hours.

Fifth Semester :

Dissertation

*The elective papers to be offered for Third and Fourth Semester will be announced at the beginning of each semester by the Principal, Malaviya Regional Engg. College, Jaipur out of following :

1. Advanced Non-ferrous Process Metallurgy.
2. Physical Metallurgy of Non-ferrous Metals and Alloys
3. Design of Alloys.
4. Advanced Ferrous Process Metallurgy.
5. Advanced Foundry Metallurgy.
6. Corrosion and its prevention.
7. Industrial Budgeting and Cost Management.
8. Metal Forming.

EXAMINATION SCHEME

I. Semester:	Paper dura- tion hours.	Paper marks	Course work marks.	Total marks
1. Mathematics	3	100	50	150
2. Research techniques in Met.	3	100	50	150
Total :				300
II. Semester :				
1. Advanced Met. Kinetics	3	100	50	150
2. Advanced Materials Science	3	100	50	150
3. Seminar	—	—	—	50
Total :				350
III. Semester :				
1. Elective-I	3	100	50	150
2. Elective-II	3	100	50	150
3. Seminar	—	—	—	50
Total :				350
IV. Semester :				
1. Elective-III	3	100	50	150
2. Elective-IV	3	100	50	150
3. Seminar	—	—	—	100
Total :				400
V. Semester :				
Dissertation	—	—	—	400
Total :				400
Grand Total :				1,800

Paper : MATHEMATICS

Statistics :

Diagrammatic presentation of data. The normal, binomial and Poisson distributions. Comparison of means and variances. Linear and multiple regression. Analysis of variance. Introduction to experimental design.

Numerical Analysis :

- (i) The solution of non linear equations by Newton Raphson secant and Regula-falsi methods.
- (ii) Interpolation and Approximation : Lagrangian Polynomial, Linear Interpolation, Inverse Interpolation Finite difference Calculus, Central Forward & backward differences formulate.
- (iii) Numerical Integration trapezoidal, Simpson and Newton 60tes methods Gaussian quadrature.
- (iv) Matrix Methods : Solution of linear equations by elimination Matrix inversion, the eigen values Problem, Gauss-Seidel method.
- (v) Solution of Differential equations : Euler methods, Runge Kutta method, Predictor-corrector methods.

RESEARCH TECHNIQUES IN METALLURGY

- (1) Techniques involving extreme environment :
High temperature and low temperature techniques. High pressure and vacuum techniques.
- (2) Techniques involving material analysis :
Electron Microprobe, X-ray diffraction and X-ray fluorescence.
- (3) Techniques of Structure Determination :
X-Ray, electron and neutron diffraction.
- (4) Techniques for direct observations of lattice imperfections.
X-ray and electron microscopy, etch-pit techniques, field-ion microscopy.
- (5) Techniques of Thermodynamic Measurements :
Measurements of activity, equilibrium constant, free energy and other thermodynamic Parameters.

ADVANCED METALLURGICAL KINETICS

Kinetics of homogeneous and heterogeneous reactions. Design of reactors.. Absolute reaction rate theory. Dimensionless groups and similarity criterion.

Kinetics of nucleation and growth processes. Kinetics of electrode processes.

Principles of heat, mass and momentum transfer and their applications in metallurgical processes (i.e. solid-gas, solid-liquid, solid-solid, liquid-gas and liquid-liquid reactions.

Modes of heat transfer, Heat transfer in stationary systems. Convective heat transfer. Radiation heat transfer.

Diffusivity and mechanism of mass transport. Steady state diffusion, Unsteady state diffusion. Convective mass transfer simultaneous and heat mass transfer.

Nature of viscosity and viscous flow in gases and liquids. Velocity distribution in laminar flow. Isothermal systems Special kinds of flow.

Kinetics of solidification, iron reduction, sulphur, Phosphorus and carbon removal in steel making vacuum melting. chlorination processes, sintering and decomposition processes etc.

Single particle reaction systems. Packed bed fluidised bed Systems Gas bubbles in liquids. Gas-jet liquid systems.

Paper 4 : **ADVANCED MATERIAL SCIENCE :**

Free electron theory and band theory: Electrical properties of materials, insulators and semi-conductors. Simple semiconductor devices. Magnetic and thermal properties of metals. Superconductivity.

Structure of crystalline and non-crystalline solids, imperfections, in materials. their classification and influence on properties. Equilibrium and non-equilibrium transformations in materials. Theory of elastic viscous and viscoelastic deformation. Strengthening mechanisms in solids. Dislocation theories of yielding and work hardening Mechanisms of creep, fatigue, fracture and superplasticity.

Properties and applications of steel, alloy steels, cast irons and non-ferrous metals and alloys of industrial importance.

Formation and structure of high polymers. Properties and applications of plastics, rubbers, whiskers, ceramics, composites and ceramic coated materials. Materials for the use in outer space and deep sea bio-materials.

ADVANCED NON-FERROUS PROCESS METALLURGY

Thermodynamics. Kinetics and reaction mechanism of solid state processes such as sintering, roasting; reduction of oxides and processes involving halogens. Advances in Solid State Processes.

Extraction reactions producing liquid and gaseous metals. Metal-slag reactions Reduction of oxides and halides by reactive metals. Matte smelting and converting of copper matte. Physico-chemical aspects. Continuous production processes. Hydrometa-

llurgical processes—Recent advances. Process metallurgy of Zinc. Recent development. Physico chemical aspects of imperial smelting.

Hydro, pyro and electro-metallurgical refining processes for common non-ferrous metals. Recent trends.

Present status of non-ferrous metallurgy with refernce to Indian conditions.

PHYSICAL METALLURGY OF NON-FERROUS METALS AND ALLOYS.

The course will deal with the metals copper, nickel, aluminium lead, zinc, tin their alloys, critical appraisal of their applications.

Physical properties, electronic and crystal structure. Thermal electrical and magnetic properties. Alloying nature, phase diagrams of important alloy systems. Non-equilibrium modifications. Structure and property changes. Thermodynamics and kinetics, theories and mechanism of heat treatment processes, corrosion and oxidation characteristics.

Deformation and heat treatment: effect of temperature, alloying additions and impurities. Recovery, recrystallisation and grain growth. Metallography. Fabrication and joining techniques. Power Metallurgy.

DESIGN OF ALLOYS

Composition control : Phase stability, production of metastable phases and effect of minor and trace elements.

Microstructural control: Thermal and mechanical treatment for control of size, shape and distribution of grain and second phase particles, texture control.

Design rationale : Strength and toughness combinations, resistance to fatigue, fracture and environmental effects.

Illustrative studies : HSLA, stainless and maraging steels, Aluminium alloys, nickel base superalloys, titanium alloys for aerospace applications and zirconium alloys in nuclear technology.

ADVANCED FERROUS PROCESS METALLURGY

Recent developments in agglomeration of iron ore. Physico-chemical aspects of iron ore reduction. Theoretical analysis of shaft furnaces. Chemical and thermal reserve zones in blast furnace metal-slag reactions. Technological advances in Blast Furnace, practice. Formed coke processes.

Alternative methods of iron making. Theory of sponge iron processes. Rotary kiln HyL and other processes.

Modern steel making practice, Carbon-oxygen reactions. Desulphurisation and Dephosphorisation. Constitution of slags. Theory of L.D. Steel making, role of emulsion, metal-slag reactions. Process control of L.D. steel making. Use of Sensors in the steel making. Electric furnace practice, O.B.M. process.

Continuous casting. Production of clean steel. Theory of deoxidation of liquid steels. Treatment of liquid steels. Vacuum degassification. E.S.R. techniques.

Principles of manufacture of stainless steel.

ADVANCED FOUNDRY METALLURGY

Properties of liquid metals. Solubility of gases in metals and alloys. Methods for degassification and estimation. Fluidity of non-ferrous and ferrous alloys, hot-tear and shrinkage of important non-ferrous and ferrous alloys.

Principals of solidification of metals and alloys, directional and progressive solidification. Macro and Micro segregation. solidification of metals and alloys under equilibrium and non-equilibrium conditions. Solidification in metallic and non-metallic moulds.

Flow of metals in moulds. Metal-Mould reactions. Gating and Riscing of important cast non-ferrous and ferrous alloys.

Characteristics of principal moulding processes and materials. Recent moulding processes, continuous casting. Casting defects in non-ferrous and ferrous alloys--causes and remedies. Quality assurance of products via NDT techniques.

Melting furnaces for ferrous and non-ferrous alloys, Melting. solidification. structure and properties of grey, malleable, SG.. and alloy cast irons and steels. factors affecting casting characteristics and heat treatment of cast non-ferrous and ferrous alloys.

General objectives and principles of foundry mechanisation.

CORROSION AND ITS PREVENTION

Introduction :

Corrosion damage. economics of corrosion. chemical and electrochemical corrosion.

Electrode potentials. EMF series. Galvanic series. Nernst Equation. Pourbaix diagrams.

Electrode kinetics :

Exchange current density, polarization mixed potential Theory passivity.

Electrochemical corrosion :

Uniform attack, galvanic corrosion, Crevice corrosion, pitting intergranular corrosion, selective leaching, erosion corrosion, fretting corrosion, stress corrosion, corrosion fatigue, hydrogen damage.

Chemical corrosion

Oxidation, high temperature corrosion, corrosion in Non-electrolytic liquids.

Corrosion Testing :

Corrosion rate measurement, stress corrosion testing, corrosion fatigue testing, Corrosion Prevention :

Cathodic and anodic protection, metallic and inorganic surface coatings, filming and absorption inhibitors. Design factors in corrosion, corrosion failure studies.

INDUSTRIAL BUDGETING AND COST MANAGEMENT

Fundamentals of Book keeping : Financial book, Manufacturing Account, Working Account, Valuation of Stock-in-trade, Depreciation and Reserves : adjusting entries, Profit & Loss Account Balance Sheet, Valuation of Assets, Goodwill, Account of Joint Stock Companies, Capital and Revenue items, fixed and floating capital, Income and Expenditure account.

Financial statements and Ratio analysis, Working Capital Fund flow and cash flow statements, variance, significant ratios, aims, objects and computation inference.

Cost Accounting : Fixed and variable expenses, break-even analysis, Various methods of costing, elements of cost, direct and indirect cost, Allocation of costs, Absorption and Marginal costing, Cost control, Profit volume ration, marginal analysis, differential analysis, standard costing variance analysis.

Budgetary Control : Types of budgets, budget performance.

Financial Management and Profit gearing, Requirement and sources of finance, Cost of capital, Control over utilisation of the finance capital allocation under certainty, Investment criteria, Concept of profit, present worth and discounting principles equivalent annual profit, Short term and long term planning objective and decisions.

METAL FORMING

Elements of mathematical theory of elasticity and plasticity, Classification of Metal forming processes, Types of Stresses used in Metal forming, Effects of various parameters on forming processes, Mechanics of Metal forming, Formability tests.

Basic principles in primary methods of forming processes of Rolling, Forging, Extrusion Sheet Metal working. Wire and Tube drawing.

Unconventional forming processes :--High energy rate forming. Electroforming, Explosive forming. Electro hydraulic forming. Magnetic pulse, Dynapak Petro-forg hammer. Metal. Joining techniques—Soldering. Brazing and Welding.

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN BOTANY HELD ON 29TH JUNE, 1983
AT 11.00 A.M. IN THE VICE-CHANCELLOR'S
SECRETARIAT.

Present :

1. Dr. J.N. Kapoor (Convener)
2. Dr. B.D. Sharma
3. Dr. L.N. Vyas
4. Prof. D. Singh

1. The Board postponed the election of one member other than Convener of Board of Studies to serve on the Committee for selection of examiners in the subject as no internal member other than the Convener was present.

2. The Board considered the Academic Council Res. No. 26 dated 24th/25th May, 1983 and resolved to recommend the courses and scheme of papers for the Final Year T.D.C. Pass Course, Examination, 1986 as under :—

A. At present there are four papers i.e. two in second year and two in Final year. All the four papers be included in the syllabus. If it is not possible to have four papers in Final year T.D.C., only three papers of 100 marks as follows be kept :

Paper I—Thallophyta, Bryodphyta and Pteridophyta.

Paper II—Gymnosperms, Angiosperm, Morphology, Anatomy and Taxonomy.

Paper III—Plant Physiology, Ecology, Cytology, Genetics, Plant breeding and evaluation.

Practical

There will be one practical examination of 100 marks of 8 hours duration spread over two days covering the course of above mentioned three papers.

In second year there will be one paper of 100 marks covering the course of paper I and Gymnosperms, Angiosperm Morphology and Anatomy of II Paper.

There will be one Practical of 4 hours based on the theory syllabus.

The detailed syllabus is enclosed as an appendix.

3. The Board considered the item of scrutinising and revising the panel of examiners and authorized the Convener to send a proforma to the University officer for forwarding it to the Principal of affiliated colleges to get the upto date list of teachers with their teaching experience and specializations. The information gathered by the University Office be considered in the next meeting of Board of Studies.

The meeting ended with a vote of thanks to the Chair.

Convener.

APPENDIX

BOTANY

Scheme :

Min. Pass Marks 108; Max. Marks 300

Paper I—3 hrs. duration	100 marks
Paper II—3 hrs. duration	100 marks
Paper III—3 hrs. duration	100 marks

Syllabus :

Paper I—Thallophyta, Bryophyta and Pteridophyta :

1. Classification of algae in main division. Reproduction and fermentation Economic Importance and culture methods of algae.

2. Brief life histories of the following forms; Oscillatoria, Chlamydomonas Volvox, Coleochaete, Chara, Vaucheria, Ectocarpus and Polysiphonia.

3. Classification of fungi in its main divisions. Brief life histories of the following form—Penicillium Claviceps, Morchella, Puccinia, Ustilago, Alternaria, A study of external morphology of Sclerospira, Pilobolus Aspergillus and Agaricus or Polyporus.

4. Bacteria—general characters, cell structure, reproduction, modes of nutrition and economic importance, Introductory knowledge of diseases—their symptoms and control measures. Detailed account of the disease aspect of the following, Citrus canker: white rust of crucifers: loose smut of wheat; Stemrust of wheat and tobacco mosaic virus. Economic importance of the bacteria and fungi.

5. Classification of bryophyta—salient features of division and its groups with special reference to the following genera; external features of Plagiasma and Pallin Distribution, structure, reproduction and life histories of the following:

Riccia, Marchantia, Porella (Medothesa) Anthoceros, Sphagnum and Pagonatum.

6. Salient features broad classification and distribution of Pteridophytes in India. Structure, reproduction and life history of the following :

Selaginella, Equisetum and Marsilia.

7. External feature of Psilotum, Ophiolossom, Thuja or Biota and Rhynia. Fossils—Their formation and types. Economic Importance of Gymnosperms.

Paper II

1. Gymnosperms : Classification salient features of the divisions and its groups, Distribution, structure, reproduction and life history of *Cycas*, *Pinus* and *Ephedra*.

2. Structure of flower, Organogeny, Structure, development and function of anther and ovule, Pollen grain and development of the types of embryo sacs. (Monobi and tetrasporic).

3. Fertilization, Embryogeny in *Capsella hursa pastoris*, Endosperm, seed and fruit formation. A brief account of experimental embryology—parthenocarpic fruits, adventive embryo culture and pollen germination.

4. Apical meristem and tissue differentiation (Primary and Secondary) in root and stem, Leaf anatomy, anomalous secondary growth, annual rings, heart and sapwood, origin of lateral roots. Vegetative propagation in stems and roots

5. Classification of Angiosperms. Salicnt feature system of classification of Bentham and Hooker. Concept of species, genera, family and order.

Morphological adaptations of hydrophytes, xerophytes and halophytes (including mangroves) Ecology of Rajasthan desert as a botanical region of India

6. Evolutionary tendencies in flower, criteria for determining primitive and avanced nature of the families Diagnostic features and economic importance of the families given in following with special reference to their local representatives :

Reanunculaceae, Cruciferae, Papaveraceae, Capparidaceae, Caryophyllaceae, Malvaceae, Eupobiaceae, Myrtaceae, Rutaceae, Leguminosae Rosaceae, Cucurbltaceae, Ubelliferae and Amaranthaceae.

7. Rubiaceae, Compositae, Apocynaceae, Asslepinaceae, Solanaceae, Convolvulaceae, Boraginaneae, Scrophulariaceae, Acanthaceae, Labiatae, Palme. Amaryllidaceae and Gramineae.

Paper III—Plant Physiology, Cytology. Genetics, Plant breeding and Evolution.

1. Physiology and Chemistry of the plant cell, solution and membranes in relation to plant cell, interfacial phenomenon, absorption. H-ion concentration, osmosis and osmotic pressure, relationship between osmotic pressuse, wall pressure and turgor pressure, diffusion pressure deficit, permeability, imbubition, loss of water from plant cell, transpiration and guttation, movement of water through the plant. ascent of sap, soil and water rel tions, water uptake. hydration of protoplasm. Mineral nutrition of plants. Water and sand culture experiments. Mineral deficiency and role of trace elements, uptake and translocation of solutes.

2. Elementary knowledge of biochemistry of proteins, carbohydrates and fats Photosynthetic Pigments, factors affecting photosynthesis, mechanism of Photosynthesis, carbohydrate, metabolism, lipid metabolism nitrogen metabolism.

3. Plant Ecology : Definition, scope and relation with other branches, concept of ecosystem. Concept of plant community-elementary knowledge about community structure (analytical characters only) and community dynamic (Plant succession), Xerosere lithosere and plasmosere) and Aydrosere, climatic dinay. Ecological sacloss clisnatic (light, temperature and water), edaphic and biotic in relation to growth and distribution of plants.

4. Anerobic and aerobic respiration, factors affecting respiration, mechanism of respiration. Digestion, enzymes, metabolism of reserve food. Growth and development, factors, affecting growth, hormones-abscisic acid, auxins, gibberellins and cytokinins, their fuinction, application of hormones, physiology of flowering. Relative growth and net assimilation rate, germination and dormancy, vernalization and Photoperiodism, internal factors of flowering. Plant movements—topic—nastic and turgor movement, nutations.

5. Cytogenetics, Cell components, mitosis and meiosis, physical and chemical structure of the chromosomes, nucleic acids. Mendelism monohybrid, dihybrid and polyhybrid ratios.

6. Brief account of physical and chemical basis of inheritance (Briefly discuss the result of Neurospore genetics).

Methods of plant breeding, selective, mass, pure line and clonal. Hybridisation. Hybrid vigour, Induced mutation and polyploidy.

Practicals :

There will be one practical examination of 100 marks of 8 hours duration spread over two days covering the courses of above mentioned three papers.

In Second year there will be one paper of 100 marks covering the course of Paper 1st and the topics, Gymnosperms, Angiosperms morphology and anatomy of Paper 2nd.

There will be one practical of 4 hours based on the theory syllabus.

Syllabus : The students are required to submit records of practical work done. Present plants from the local flora collected during.

Excursions, identified and mounted on standard sheets, describe micro-scopic preparations and two prepared suitable micro-scopic preparations for Cytological study, identify and describe plants and plant parts. and set up and comment upon experiments in Plant Physiology as listed below :—

**LIST OF THE EXPERIMENTS TO BE SET UP
BY THE STUDENTS**

(1) Osmosis :

1. Grapes and dried grapes (raisins).
2. Potato Osmoscope—semipermeable memberane.
3. Plasmolysis—deplasmolysis (Epidermal cells of Rhoeo).

(2) Root pressure :

An experiment on root pressure with the stump of Balsam Plants.

(3) Transpiration :

1. Potometer :
 - (a) Ganongs.
 - (b) Farmers.
2. Unequal transpiration from two surfaces of leaf.
 - a) Cobalt chloride paper.
 - (b) Fur-lead method (with greased surfaces).
3. Demonstration of water-lifting power of transpiration (Suction force).
4. Ringing experiment.
5. Study of stomata.

(4) Photosynthesis :

1. Oxygen is given off during photosynthesis—Wilmott's bubbler.
2. Light is necessary for photosynthesis.
3. Chlorophyll is necessary for photosynthesis.
4. CO_2 is necessary for photosynthesis.
5. No Oxygen liberation without CO_2 .

(5) Respiration :

1. CO_2 produced in respiration.
2. Loss of dry weight in respiration.
3. Anaerobic respiration.
4. R.Q Ganong's respirometer, carbohydrates, fatty seeds and Opuntia phyllocladas.

(6) Plant Movements :

1. Geotropism.

2. Phototropism.
3. Movement of protoplasm.
4. Hydrotropism.
5. Klinostat.

(7) Growth :

Arc auxanometer.

Students are required to go either in second year or in the third year on one excursion for the study of plants in the field and collection of plant materials for routine class work.

The following places are mentioned (these are beside the local excursions) : Mount Abu, Nainital, Masoorie, Panchmarhi, etc.

Books Recommended :

1. Boner & Gaston : Principles of Plant Physiology W.H. Freeman & Co., an Francisco.
2. Devlin, R.M. : Plant Physiology, Van Norst.
3. Dutta, S. C. : A Hand Book of Systematic Botany, Asia, Bombay.
4. Esau. K. : Anatomy of Seed Plants John Wiley.
5. Sinnot and Dunn : Principles of Genetics, Mc. Graw Hill. New York.
6. Syanson, C. P. : Cytology and Cytogenetics. Prentice Hall.
7. Tansley. A.G. : Introduction to Plant Ecology, George Allen and Unwin, London.
8. Bhatia and Parashar : Plant Physiology.
9. Alexopoulos, C.M. : Introductory Mycology, Jhon Wiley & Sons, New York.
10. Campbell, D.H. : Embryophyta, Standford University Press.
11. Coulter, J.M. and Chamberlain C.J. : Morphology of Gymnosperms. Reprinted, Central Book Depot. Allahabad.
12. Dutta, S.C. : Introduction to Gymnosperms. Asia, Bombay.
13. Eames, A.J. : Morphology of Vascular Plants (lower groups) Mc Graw Hill, New York.
14. Foster, A.S. & Gifford, F. : Comparative Morphology of Vascular Plants, Allied Pacific, Bombay.

15. Maheshwari, P. : An Introduction to the Embryology of the Angiosperms, Mc Graw Hill, New York.
 16. Parihar, N.S. : Bryophyta, and Pteridophyta, Central Book Depot. Allahabad.
 17. Smith, G.M. : Cryptogamic Botany, Vol. I and II Mc Graw Hill, New York.
 18. Ghemavat, Kapoor & Narayana : Algae (Ramesh Book Depot. Jaipur).
 19. P.D. Sharma, Bryophyta, M/s Ramesh Book Depot. Jaipur.
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MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN STATISTICS HELD ON 20TH JULY, 1983
AT 12.00 NOON IN THE VICE-CHANCELLOR'S
SECRETARIAT, JAIPUR.

Present :

1. Dr. H. L. Agrawal (Convener)
2. Dr. J. Singh
3. Dr. S. S. Sharma

1. Under Clause (iv) of the sub-section (4) of Section 34 of the University Act, the Board elected Prof. J. Singh, Professor and Head, Department of Statistics, Vikram University, Ujjain, as a member other than the convener of the Board of Studies to serve on the Committee for Selection of Examiners in the subject for the year.

2. The Board considered the Academic Council resolution No. 20 dated 24/25th May, 1983 and resolved that there shall be an examination at the final year T.D.C. Examination of 1986 based on two years courses of T.D.C. Part II and Part III in the following manner

There shall be four theory papers and two practical papers :

Paper I—(Paper I of present T.D.C. Part II)

Paper II—(Paper II of Present T.D.C. Part II)

Paper III—(Paper I of present T.D.C. Part III)

Paper IV—(Paper II of the present T.D.C. Part III).

Practical I—Practicals based on papers I & II.

Practical II—Practicals based on papers III & IV.

The contents of papers I, II and Practical I be covered in TDC Second Year, and Papers III, IV and Practical II be covered in TDC Third Year.

The details of the syllabi for Statistics and Applied Statistics are given respectively in Appendices A and B.

3. The Board prepared a complete panel of Examiners in terms of clause 2 (A) of Statute 25 of the University Hand Book.

The meeting ended with a vote of thanks to the Chair.

(H. L. Agarwal)
Convener.

APPENDIX—A

STATISTICS

Paper—I

Finite Differences, Sampling Distributions and Estimates :

1. Meaning of Interpolation and Extrapolation. Difference Table and n th order Differences of a Polynomial, Operators Δ and E and their relationship, Newton's interpolation formulae for equal and unequal intervals, Lagrange's interpolation formulae.

- 2 Sampling Distribution :

Statistics and the concept of its sampling distribution. t , Chi-square and F distributions and their derivations. Point estimation, Criteria of a good estimator.

Unbiasness, consistency and efficiency. Simple Notion of interval estimation, confidence intervals for normal case.

Books Recommended :

1. Kapoor and Gupta, Mathematical Statistics.
2. Goon, Gupta, and Das Gupta, Fundamentals of Statistics, Vol. 1.
3. Kapoor and Saxena : Mathematical Statistics.
4. Saxena and Surndram : Statistical Inference.

Paper II—Correlation Theory and Tests of Hypothesis.

1. Association and contingency. Fitting of straight lines and parabola.
2. Scatter diagram, Regression and correlation effect of change of origin and scale on correlation coefficient. Spearman's rank correlation co-efficient.
3. Tests of Hypothesis :

Test of significance on t , Chi-square and F distribution. Definitions of simple, composite, null and alternative hypotheses.

Two kinds of errors in testing a simple vs. simple alternative hypothesis only. Critical region and best critical region based on Neyman Person principle. Use of sign, median and run tests for large samples.

Books Recommended :

1. Kapoor and Gupta, Mathematical Statistics.

2. Goon, Gupta, and Das Gupta : Fundamentals of statistics Vol. I.
3. Kapoor and Saxena : Mathematical Statistics.
4. Saxena and Sundaram : Statistical Inference.
5. Sidney Siegal : Non-parametric Statistics for Behavioural Sciences.

Paper III—Design of Experiments and Sample Surveys

1. Design of Experiment :

Analysis of variance, linear models : Analysis of one way classified data, two way classified data with one observation per cell. Effects of violation of the assumptions made in analysis of variance and transformations.

Terminology in experimental design, principles of experimentation : randomisation, replication, local control, choice of size, shape of plots and blocks, Completely randomised design. Randomised block design. Latin Square design.

2. Sample Surveys :

Basic Principles of sample survey, probability Sampling and non-probability Sampling. Urn-models and Simple Random Sampling. Stratified Random Sampling.

Cluster Sampling. Systematic Sampling, Two-stage Sampling.

Books Recommended :

1. Ponce and Sukhatme : Statistical Methods for Agricultural Workers.
2. Goon and others : Fundamentals of Statistics Vol. II.
3. B. D. Tikkiwal : Appendix to Lecture Notes on Advanced Theory of Sampling Survey.
4. Tareyamane : Sampling Theory.
5. Sukhatme and Sukhatme : Sampling Theory of Surveys with applications.

Books for Reference :

1. Cochran and Ces : Experimental designs.
2. Kish : Sampling Techniques.
3. Cochran : Sampling Techniques.

Paper IV—Quality Control, Economic Statistics & Vital Statistics :

Quality Control :

Concept of quality control, process control, specification, control charts (S.R. Pande) and their uses Economic Statistics :

Present Statistical system in India, Agriculture and Population statistics in India. Index number, meaning and uses, construction of Index numbers, fixed base and chain base. Calculation of indices of prices and cost of living, tests of index numbers, Fisher's ideal index number.

Vital Statistics :

Birth and death rates, Measurement of fertility, reproduction rates, Census Organisation, Distribution of Populations according to age, sex, occupation etc. Life table (without construction) and its uses Birth, death, marriage and migration statistics in India

Books recommended :

1. Goon and others : Fundamental of Statistics Vol. II.
2. Kapoor and Gupta : Applied Statistics.
3. S.R. Srivastava : Applied Statistics.

Practical—I Practicals based on Papers I & II.

Practical—II Practicals based on papers III & IV.

APPENDIX—B

APPLIED STATISTICS

Paper I—Statistical Mathematics and Correlation Theory :

1. Differential Calculus :

Functional relationship between two variables and different ways of representing their relationship. Polynomial exponential and logarithmic functions infinitesimal Quantities and notion of limit, Rules for finding limits of sum, difference, product and ratio of functions. Definition of differential coefficient and its physical interpretation as a rate measurer. Standard results for differential coefficients $(a+bx)$, $e^{ax} + b$, $\log(ax+b)$ (without proof). Rules of differentiation for sum difference product. quotient and function of a function (without proof) Simple examples, meaning of partial differentiation, interpretation of sign of dy/dx . maxima and minima of simple function.

2. Interpolation :

Meaning of interpolation and extrapolation with equal intervals. Difference table and n th order, difference of a polynomial. Operator E and their relationship. Newton's Forward and Backward formulae for equal intervals and simple numerical problems.

3. Association and Contingency :

Fitting of straight lines and parabola. Association and independence of attributes in a (2×2) contingency table coefficients of association.

4. Correlation :

Scatter diagram, regression and product moment correlation. Effect of change of origin and scale on correlation coefficient, Spearman's rank correlation coefficient.

Book recommended :

1. Goon and Others : Fundamentals of Statistics (Vol. II)
Patni and Gaur : Calculus.

Paper II—Distribution and Inference :

1. Distributions ;

Continuous random variable and its density function, normal distribution. Elementary properties of normal distribution (without proof) and application. Statement of central limit theorem. Random sampling from

a finite population space of sample points Statistics and concept of its sampling distribution Sampling from normal population. Idea of chi-square, t , and F distribution. Distribution of linear combination and Sum of squares of standard normal variates (without proof).

2. Estimation :

Point estimators, mean square error of estimators. Unbiasedness and minimum variance unbiased estimators, Interval estimators confidence coefficient. Method of constructing confidence interval for μ and σ in normal case.

3. Test of hypothesis :

Test of significance of hypothesis, level of significance, test of significance. test criterion, chi-square, t and F tests with applications. Null and alternative hypothesis definition of simple and composite hypothesis, Two kinds of errors in testing a simple vs. simple hypothesis only. Critical region, B.C.R. based on Neyman Pearson principle.

Use of sign, median and run tests for large sample only.

Book recommended :

Goon and Others : Fundamentals of Statistics (Vol. I)

Paper III—Design of Experiments and Sample Surveys

1. Design of Experiments :

Analysis of variance, linear models. Analysis of one way classified data, two way classified data with one observation per cell. Effects of violation of the assumption made in analysis of variance and transformations.

Terminology in experimental design, principles of experimentation randomisation, replication, local control, choice of size, shape of plots and blocks. Completely randomised design. Randomised block design. Latin Square design.

2. Sample Surveys :

Basic Principles of sample surveys, probability sampling and non-probability sampling. Urn-models and simple random sampling, Stratified random sampling.

Cluster sampling, Systematic sampling, Two-stage sampling.

Books recommended :

1. Panse and Sukhatme : Statistical Methods for Agricultural Workers.
2. Goon and others : Fundamentals of Statistics Vol. II
3. Tikkiwal, B. D. : Appendix to Lecture Notes on Advanced Theory of Sample Survey.
4. Tareyamane : Sampling Theory
5. Sukhatme : Sampling Theory of Sirsukhatme Views with applications.

Books for reference :

1. Cochran and Cos : Experimental designs.
2. Kiph : Sampling Techniques.
3. Cochran : Sampling Techniques.

Paper IV—Quality Control, Economic Statistics and Vital Statistics.**Quality Control :**

Concept of quality control, process control, specification, control charts (\bar{X} , R, p and c) and other uses.

Economic Statistics :

Present Statistical System in India, Agricultural meaning and population statistics in India. Index numbers, and uses, construction of index number, fixed base and chain base, calculation of indices of prices and cost of living, tests of index numbers, Fisher's ideal index number.

Vital Statistics :

Birth and death rates, Measurement of fertility, reproduction rates. Census Organisation, Distribution of population according to age, sex, occupation etc. Life table (without construction) and it's uses. Birth, death, marriage and migration statistics in India.

Books recommended :—

1. Goon and others : Fundamental of Statistics Vol. II.
2. Kapoor and Gupta : Applied Statistics.
3. Srivastava, S. R. : Applied Statistics.

Practical I—Practicals based on papers I & II.

Practical II—Practicals based on papers III & IV.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN CHEMISTRY HELD ON 29-9-83 AT 12.00 NOON
IN THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

Present :

- | | | |
|---|--------------|-------------------------|
| 1. Prof. K.C. Joshi | (Convener) | |
| 2. Dr. A.I.P. Sinha | | |
| 3. Dr. V. Iyer | | |
| 4. Dr. G.V. Bakore | | |
| 5. Dr. J.N. Gaur | | |
| 6. Dr. M K. Gupta
Regional College, Education,
Ajmer. | } | <i>Special Invitees</i> |
| 7. Dr. C.M. Gupta
Board of Secondary Education,
Rajasthan, Ajmer. | | |

1. The panel of examiners for internal teachers was scrutinised and it was recommended that the names of the teachers of the Regional College of Education, Ajmer be included.

As far as External Examiners are concerned, it was approved that all permanent teachers of Indian Universities and Post-Graduate Collèges be recognised for evaluation.

2. The reports of the examiners and the question paper set for the Examinations of 1983 were considered and contents were noted

3. The following change was made in the 3rd year B.Sc. Chemistry practical syllabus and it was resolved that it, should be implemented with immediate effect i.e. from the examination of 1984 and all colleges should be informed accordingly.

In the list of Inorganic exercises, the following changes are made :—

Either the candidate will do any three experiments from exercise No. 2 or exercise No. 3 will be done. Thus the

candidates will have an option of attempting only experiments either from exercise No. 2 or exercise No. 3 and not both.

The syllabus for Honours examination—2 years scheme (Part I and Part II) was approved.

4. Regarding the translation of syllabus into Hindi, the University was requested to get this work done by paying suitable remuneration to a competent translator. The name of the translator can be recommended by the Convener. It was felt that it is not practical to undertake this work during the meeting of the Board of Studies.

5. Letter No. F. 3-29/80 (CP) (ii) dated 18-2-1982 from the Secretary, U.G.C. was considered.

Further the Academic Council Resolution concerning the abolition of the University Examination at the end of the 2nd year was considered. Necessary decision in this respect was already taken by the Board at the last meeting when it was suggested either there should be 6 papers at the end of 3rd year or the present practice of three papers should be continued with two sections each (Section A covering questions from second year and Section B from 3rd year).

Sd/-
(Convener)

MINUTES OF THE COMMITTEE OF COURSES IN LIBRARY
SCIENCE HELD ON 15-11-1983 AT 1.00 P.M. IN THE
VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

The following were present :

- | | |
|--------------------------|--------------------|
| 1. Shri. S.N. Srivastava | (Convener) |
| 2. Dr. (Mrs.) P. Dhyani | |
| 3. Shri S.P. Sood | |
| 4. Prof. P.B. Mangla | } External Members |
| 5. Mohd. Sabir Husain | |

1. No change was suggested in the panel of examiners.
2. Examiners reports were placed before the Committee. It was suggested that the relevant portion of the examiners report be communicated to the teachers teaching the subject.
3. The Committee scrutinised the different courses of study and text-books and observed as follows :
 1. C. Lib. Sc. Examination, 1986 —No Change.
 2. B. Lib. Sc. & Doc. Examination 1986 —Appendix 'A'.
 3. M. Lib. Sc. & Doc. Examination 1986 —No Change.
4. The Committees recommended that the minimum requirement for admission to B. Lib. Sc. & Doc. course be raised from 45% marks at the Bachelor's or Master's degree examination and Ordinance 329-J be amended accordingly.

While recommending the above change the members felt that since admission to this course (B. Lib. Sc. & Doc.) during the last 5 to 8 years have been offered only to superior qualifications in order of merit, this provision of 45% marks has no particular meaning except to increase in the number of applications received.

This provision may be made applicable for admissions of 1984-85 session.

5. With regard to the admission to C. Lib. Sc. course, Committee of courses recommends that the minimum admission requirement for the course should be a senior school Certificate (10+2 pattern) or equivalent qualifications (i.e. 1st Year T.D.C) etc. preferably in 2nd Division. In case the number of applications for admission would be larger those possessing higher qualification should be given higher priority.

This should be made applicable from the admissions of 1984-85 session.

6. The changes recommended for the Paper VII : Bibliographical & Reference Sources (Practical) of B. Lib. Sc. & Doc. course should be made applicable from 1984-85 session.

The meeting ended with a vote of thanks to the chair.

Sd/-
(S.N. Srivastava)
Convener

APPENDIX—A

B. Lib. Sc. & Doc.

Paper VII—Bibliographical & Reference Sources (Practical) Substitute O. 3 by the following :

To ask the examinees to mention the title of 2 reference tools for each of the 5 questions out of 8 questions.

From the list of Bibliographical & Reference Tools Substitute/delete the following :

Encyclopaedias :

Delete item No. 5 : World Art Encyclopaedia.

Year Books & Almanaces

Delete Item No. 5 : World Book Almanac-Book of Facts.

Delete Item No. 6 : Information please Almanac.

Delete Item No. 7 : Whitaker's Almanac.

Geographical Sources :

Delete Item No. 4 : Hammond Atlas.

Biographical Sources :

Delete Item No. 5 : Mc Graw Hill Man of Science & Technology.

Dictionaries & Hand-books :

Substitute Item No. 4 : Bowker's Annual by "World of Learning."

Current Sources :

Delete Item No. 3 : African Diary.

MINUTES OF THE MEETING OF BOARD OF STUDIES IN
BUSINESS ADMINISTRATION HELD ON 26TH, 27TH
AND 28TH SEPTEMBER, 1983 AND 18TH AND 19TH
JANUARY, 1984 AT 12.00 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT, UNIVER-
SITY OF RAJASTHAN, JAIPUR.

Present :

1. Dr. P.K. Srivastava
2. Shri G.N. Sharma
3. Shri K.M. Nuval
4. Shri R.N. Thakur
5. Dr. Dool Singh attended the meeting on 18th January, 1984 only.
6. Prof. R B. Upadhyaya—(*Convener*).

Prof. B.S. Sharma, External member did not attend the meeting. Shri R.N. Thakur could not attend the meeting on 18th & 19th January, and Dr. P.K. Srivastava could not attend on 19th January.

1. Under sub-Section (8) of Section 24 E of the University Act Prof. R.B. Upadhyaya was appointed Convener of the Board of Studies in Business Administration.

2. Under clause (iv) of Sub-Section (4) of Section 34 of the University Act Shri K.M. Nuval was elected member other than the Convener of the Board of Studies to serve on the Committee for selection of Examiners in the subject of Business Administration for the year.

3. The Board placed on record its appreciation of the services of Shri S.C. Hada, Ex-Convener, Board of Studies in Business Administration during his term of office.

4. Statements of qualifications and teaching experience etc. of teachers received from the University Teaching Department, University Colleges, affiliated Institutions and other Universities were scrutinized and the criteria for preparation of panel of Examiners

in terms of clause 2(a) of Statute 25 of the University Hand-Book Part II were discussed and a Committee consisting of Prof. R.B. Upadhyaya, Dr. P. K. Srivastava and Shri G. N. Sharma was constituted to prepare and finalise the panel of Examiners.

5. The Board Scrutinized the reports of the examiners and found that some of the reports were unduly sketchy. The Board felt that it was due to the fact that the data and analysis given in the reports are not classified tabulated and published with the result that these reports have completely lost their relevance. Under the circumstances it will be in the fitness of things to dispense with these reports altogether.

The Board further recommended that consequential changes in the relevant provisions of the University Hand Book be made. The University office was unable to supply the question papers of 1983 Examinations and hence it was not possible to offer any comments in respect of question papers.

6. The Board recommended courses of study and text books in The subject for the following Examinations together with relevant additions, deletions and/or alterations as indicated below :

I. Degree Examinations :—

- (a) First Year T.D.C. (Pass Course) Examination, 1986.
- (b) Second Year T.D.C. (Pass Course) Examination, 1986.
- (c) Third Year T.D.C. (Pass Course) Examination, 1986.

The Board recommended the following changes in the scheme of Examination—

- (i) There will be a compulsory paper of Insurance in Second year in place of Paper I—Industrial Organisation and the Optional Group of Principles and Practice of Insurance in II year and III year will stand abolished.
- (ii) A new optional group of Industrial Organisation and Industrial Relations will be introduced in place of

Industrial Relations and Labour Legislation. In Second Year the first paper of this optional group shall be—

(Paper I)—Industrial Organisation and in Third year the Second Paper will be—

(Paper II)—Industrial Relations, Consequent upon these changes the scheme of the Degree Examination will be as under—(The compulsory group remaining as it is).

Optional Gr. & Paper

I Year I. Business Organisation

II Year—Paper I Commercial and Industrial Law.

II Insurance.

1. Industrial Organisation and Industrial Relations.

Paper I—Industrial Organisation.

2. Salesmanship and office management.

Paper I—Salesmanship

3. Steno-Typing

Paper I—Steno-typing English/Hindi.

III Year—Paper I Company Law and Secretarial Practice

II Management

1. Industrial Organisation and Industrial Relations.

Paper II—Industrial Relations.

2. Salesmanship and office Management.

Paper II—Office Management.

3. Steno-Typing.

Paper II—Steno-typing English/Hindi

The Board *resolved* to adopt the syllabus of all the subject/papers as recommended by the special Committee of Faculty of Commerce under item 7 of these minutes and given in *Appendix 'D'* subject to certain changes as given in *Appendix 'A'* attached to these minutes. The Board recommended books for study in various subjects/papers as given in *Appendix 'A'*.

II. Honours Examinations (Two year Scheme)

(a) Part I—Second Year Commerce Examination, 1986.

Paper I—Small Business Management

(syllabus : the same as prescribed for Part II in the previous year).

(b) Part II—Third year Commerce Examination, 1986.

Paper II—Corporate Management

(syllabus : the same as prescribed for Part I in the previous year)

III. Certificate/Diploma Courses in

1. Steno-typing.
2. Salesmanship and Marketing
3. Personnel Management and Labour Welfare
4. Entrepreneurship No change

IV. Post-Graduate Examinations :

- (a) M.Com. Previous Examination of 1986.
- (b) M.Com. Final Examination of 1987.

The existing syllabus was approved subject to changes as contained in *Appendix 'B'*.

V. M. Phil Examination of 1986.

The existing syllabus was approved subject to changes as contained in *Appendix 'C'*.

7. The Board considered the recommendations of the special committee appointed by the Faculty of Commerce for re-structuring the Degree Courses in Commerce and *resolved* that courses of study for the degree Examination in Commerce be re-structured as per the recommendations of the aforesaid committee and that this new scheme of Examination should be introduced with the I year T.D.C. Examination of 1985 and continue in II and III year in succeeding years of 1986 and 1987. The Scheme as recommended by the special Committee and the syllabus as finalised by the Board of Studies in Business Administration is given in *Appendix 'D'*.

8. The Board observed that the Books published in 1982 or earlier and submitted last year on or before 1st December, 1982

were placed before it for consideration and recommendation as text books or reference books for the Examinations of 1986 and 1987, while new additions of the same books published in 1983 were available in the market. The Board, therefore, resolved that date of submission of books should be changed from 1st Dec. to 31st July each year so that the latest editions of the books could be submitted for consideration of the Board of Studies.

In the course of perusal of submitted books it was observed that the books were submitted on or before 1st December, 1982 but the year of publication of some of the books was printed and shown as 1983-84 on the first and second pages of the books. The Board noted with surprise that the books shown as published in 1983 and 1983-84 were submitted for consideration of the Board on or before 1st Dec. 82, which could not have been possible. The statement of details about the book as given by the publishers does not contain any reference to the year of publication. The Board, therefore, resolved that the existing statement of details be changed so as to include the year of publication also and the publishers adopting such a practice of showing future year(s) as year(s) of publication should be warned not to adopt such a practice in future.

9. The Board noted that the minutes of Faculty of Commerce held on 18th June, 1983 was not correctly recorded in the sense that Faculty has actually recommended the paper Small Business Management for B. Com. (Hons.) in Business Administration Part II Examination, 1984 and the paper small Business Management for B.Com. (Hons.) in Business Administration Part I Examination. 1984 and the paper-Corporate Management for B. Com. (Hons.) in Business Administration Part II, 1985 Examination but only first part of the decision i.e. the Small Business Management for B.Com. (Hons.) in Business Administration Part II Examination, 1984 was recorded in the minutes. *Resolved* that the minutes of the meeting of the Faculty be corrected and a circular be sent to all the Colleges bringing in force the teaching of small Business Management paper with effect from B.Com. Part I Examination, 1984.

10. Resolved that the optional papers belonging to each of the three disciplines in the Faculty of Commerce be shown discipline-wise in the syllabus.

11. The University sent a circular making certain changes in the syllabus of IX, Paper-Essay and Comments for the M.Com. (Final) Examination of 1983. The syllabus of the M.Com. (Final) Examination of 1984 contains the same original contents without incorporation of the aforesaid changes which were circulated as an emergency measure. The Board, therefore, resolved that the changes made last year should be made applicable to the M.Com. (Final) Examination, 1984 also and a similar circular should be sent at the earliest to all the colleges concerned.

12. The Board considered the item No. 6 of agenda pertaining to translation of the syllabi in Hindi. A special Committee appointed by the Faculty of Commerce has proposed a new scheme of Commerce education which is likely to be accepted by the Faculty. The work of translation should be taken up when the new scheme is finalised and approved by the concerned University bodies.

13. The Board considered a letter No. F. 3-29/80 (CP) II dated the 18th Feb., 82 from the Secretary, University Grants Commission regarding keeping in view the provision of the Constitution of India such as secularism and unity of the nation etc, while drafting the syllabus and prescribed text books. The board noted with satisfaction that adequate care has been taken in the new scheme of undergraduate commerce education framed by the special committee and finally approved by the Board after incorporation of such aspects of national importance in the syllabi. Further subjects such as "insurance" and job-oriented courses have been adequately included in the syllabus.

14. The Board observed that the allocation of certain diploma courses and subjects to the three departments in the Faculty of Commerce is contrary to the Principle of Departmentalization in the Faculty of Commerce, and that such a policy eventually strikes at the very roots of the principle of Departmentalization assiduously nurtured over the years by the Faculty of Commerce,

University of Rajasthan. In this connection mention was made of P.G. Diploma in Management of Small Scale and Agro Industries allotted to the Department of EAFM and Additional optional papers such as Purchasing Management and Stores Management at the undergraduate level allotted to the Department of Accountancy and Business Statistics. *Resolved* that the Faculty of Commerce be requested to reconsider this decision in the light of the principle of Departmentalization in the Faculty of Commerce and to reallocate subjects accordingly.

15. The Board discussed the provisions pertaining to offering of dissertation by M.Com. Final students. During the course of discussion it was pointed out that in spite of the best efforts of the supervisors the possibilities of copying from previous dissertations are increasing day by day with the result that all the dissertations may not be genuine.

The Board, therefore, resolved that, as is the practice in the case of Ph.D. dissertations, the Viva-Voce be made compulsory in case of M.Com. dissertations also with effect from the Examination of 1984 and the said Viva-Voce examination be arranged to be held at Jaipur and at some other central places according to the number of dissertations offered.

16. The Board considered a complaint from affiliated Colleges about certain contents of the book Commercial Law by Mathur and Saxena, Published by Ramesh Book Depot, Jaipur. According to this complaint the court case of unfair means entitled. Suresh Kumar Bafna V/s. University of Rajasthan, 1981 has been quoted in explanation to section 17 of the Indian Contract Act, 1982 relating to 'Fraud' at page 98 of 1983-84 edition of the aforesaid book. The case has been further dealt with in detail in 4 pages ranging from 121 to 124 of the book. This case of pertaining to use of unfair means in University Examinations has not relevance to Section 17 of the Indian Contract Act, 1872 and is totally redundant and misleading in the quoted context. Apart from the printers "devils such as" "वाइस्त चान्दर" for "बारत चान्दर" in line 6th para 3 at page 121 and distorted version of the case such as "अनुचित रुद्धों वा उपयोग नहीं किया है" in line 3rd of para 4 at page 122, whatever the purpose of the author in publishing this case against the University, out of

context, through this recommended book, its impact upon the students of impressionable age cannot be said to be at all salutary. In view of the above the Board was *constrained to resolved* that the book be deleted from the list of recommended books for Business Administration Paper II (Business Law) of second year commerce Examination.

The meeting ended with a vote of thanks to the Chair.

Sd/—
(Dr. R.B. Upadhyaya)
Convener

APPENDIX—A

(*Ref. Res. No. 6 (I) of the Minutes*)

I, II & III Yr. Degree Examinations, 1986

1. A candidate desiring to offer Steno-Typing in Second Year shall be required to offer Steno-Typing in First year as provided in the compulsory Group. The syllabus of Steno-typing in compulsory Group is revised as under Part I—Short hand
M. Marks 50

Writing in shorthand a passage for 5 minutes carrying 30 marks and a letter for 3 minutes carrying 15 marks, with an interval of 5 minutes in between, to be dictated at the speed of 60 words per minute and to be transcribed in candidates own handwriting within a period of clear out one hour. The time of dictation and interval will not be included in this period of one hour. 5 marks out of 50 shall be reserved for correct outlines in shorthand.

Note : It will be compulsory to obtain at least 25% i.e. $12\frac{1}{2}$ marks in shorthand (English or Hindi) in order to pass the Examination in Steno-Typing.

Paper II—Speed and Efficiency Test in Typewriting in English/Hindi
—50 marks

Section—I Speed Test :

Typewriting a hand written passage/letter at a speed of 30 words per minutes in English and 25 words per minutes in Hindi for a period not exceeding 15 minutes. The actual time taken by the candidate shall be noted on the type sheet of the candidate concerned so as to enable the examiner to calculate his speed.

Section—II Efficiency Test Max. Marks 25

Typewriting a handwritten letter containing 200 words with a maximum of 15% language mistakes therein. The candidate will be required to correct these mistakes and type the letter correctly in a correct form and the time allowed shall be 30 minutes.

The following topics in the paper Business Organisation in First Year Examination, 1985 shall be omitted from the Syllabus of Business Organisation as given in Appendix 'D'.

State in relation to industry—Public, Joint Sector enterprise system, small scale industries, DICS.

Labour Management—Methods of wage payment. Workers participation in Management. knowledge of insurance—life, Fire and marine, Miscellaneous insurance.

The syllabus of the new optional group—Industrial Organisation and Industrial Relations is given below :—

Second Year Examination, 1986

Optional Group—Industrial Organisation and Industrial Relations.

Paper I—Industrial Organisation :

1. Process of Industrialization industrial entrepreneurship, Development of industries, types of industries, size of industrial unit, establishment of a new industrial enterprise.
2. State in relation to industry. Industrial policy—Industrial Licensing policy, Control of Monopoly and restrictive trade practices, Industries (Development and Regulation) Act.
3. Economic and Social consequences of industrialisation.
4. The relative merits and demerits of private, public, joint and cooperative sectors of economy, concept of mixed economy.
5. Plant location, Layout and maintenance.
6. Research and Development.
7. Industrial sickness.

Third Year Examination, 1986

Optional Group—Industrial Organisation and Industrial Relations.

Paper II—Industrial Relations :

Evolution and Development of trade unions in India.

Principles and Practice of collective bargaining.

Industrial Disputes—forms, methods of prevention and settlement of disputes, Negotiation and contract Administration, grievance procedure, Discipline, absenteeism and labour turn-over, Wage incentive plans. workers participation in Management.

Books Recommended/Deleted :

(i) Second Year Examination, 1986.

Paper II—Business Law—Add at Serial No. 8.

जे.पी. निपल—व्यापारिक सन्धियम—अजमेरा बुक कम्पनी,
जयपुर ।

(ii) Third Year Commerce Examination, 1986.

Paper I—Company Law and Secretarial Practice
Add at Serial No. 4.

सायुध एवं चक्रेता—कम्पनी अधिनियम एवं सचिवीय पद्धति
आदर्श प्रकाशन, जयपुर ।

Paper II—Elements of Management.

Delete the book at Serial No. 7.

By Dr. R.G. Sarin and Dr. R. B. Upadhyaya.

Add :

at serial No. 7.

7. डा. आर. पी. वर्मा—प्रबन्ध के तत्त्व, आदर्श प्रकाशन, जयपुर ।
8. जे. पी. मिश्र—प्रबन्ध के तत्त्व, अजमेरा बुक कम्पनी जयपुर ।
9. डा. जी. डी. वर्मा तथा—प्रबन्ध के तत्त्व, रमेश बुक डिपो,
जी. सी. नुराणा जयपुर ।

(Ref. Res. No. 6 (IV) of the Minutes)

M.Com. (Final) Examination, 1987

Changes recommended in Syllabus and Text books as under :

1. Paper I—Theory and practice of Management :
 - (a) Delete the following :
 - (i) In para 4—“Coordination—the essence of Managership”
 - (ii) In para 5—Unity of Command “Line and Staff”.
 - (iii) In para 6—“Techniques of Control”.
 - (iv) In para 7—“Decision Making.”
 - (b) Add the following :
 - (i) In para 3 after “Lewin”—“C. I. Barnard”.
 - (ii) In para 7 before the words “Effective communication”

}	Decision making, Transactional Analysis.
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2. Paper II—Marketing Management :

—Add the following note at the end of the course of study before the words “Books Recommended”—

Note :—“This paper should be taught with special reference to Indian conditions”.
3. Paper III—Business, Society and Government : Delete “Objectives of Business” In para No. 1.
4. Paper IV—Managerial Economics and Management Accountancy
 - (a) The Syllabus of “Managerial Economics” was re-drafted as under—

Nature and scope of Managerial Economics—Economics and Managerial Decisions, Micro-Macro Economics, Inter-disciplinary approach in Managerial Economics, Role and Responsibilities of Managerial Economics.

Micro—Economic Problems :—Theory of Consumer Behaviour, Demand Analysis, Demand Forecasting.

Cost-Analysis, cost-output relationship, Economics and diseconomics of scale.

Price decisions under different market structures—pure competition, Monopoly, Monopolistic competition Price discrimination, Pricing of joint products.

Concept of Profit under different economic systems.

Macro Economics Problems :

National Income Analysis and Business Forecasting.
Recent Development in the theory of Economic growth.

(b) *Management Accountancy :*

Last and 5th para—Add—“Performance budgeting” after “Long term budgets.”

5. *Optional Papers :*

Group I—Institutional Management.

Paper—I—Management of Co-operative Institution.

The whole syllabus was changed and re-drafted as under :—

Principles of cooperation, Types of Cooperatives—Origin and development of cooperative movement in India.

Present trends in Management of Cooperative Organisations :

Deofficialization.

Depoliticalization.

Need for separation of deliberative, executive and quasijudicial functions, Span of supervision, organisation structure and organisation chart.

Management Development — Development of Management Cadre, education of members and training of Personnel, Development of cooperative spirit and cooperators, continuous sound succession of cooperators, Need, present position and scope for improvement.

Management patterns of cooperatives at primary, secondary and apex levels in cooperative banks, land mortgage banks, marketing societies, consumer cooperatives and cooperative Processing societies.

Control Mechanism in Cooperatives—

(i) Internal control Mechanism—continuous system of internal check and internal audit, Per-

formance: budgeting, efficiency audit, management audit and social audit, Inventory control, control of overdues.

- (ii) External control Mechanism—Role of Registrar of Cooperative societies—Regulation, Supervision and control, Inspection and audit. Management of Public Relations in Co-operatives.

Books recommended :

1. Stephenson—Management of Cooperative Societies.
2. Guy Hunter—Studies in Management.
3. Report of the Regional Seminar held in Phillipines Ica on Cooperative Management.
4. I.L.O. Cooperative Organisations.
5. B.S. Mathur—Cooperation in India.
6. M.C. Khandelwal—Cooperative audit Rayed.
7. Taimni, K.K. (Ed.) Managing the cooperative enterprise, Minerva Associates Publications Pvt. Ltd., 7-B, Lake Place, Calcutta-700 029.
8. Taimni, K.K. (Ed.) Training and Development of Human Resources in Cooperatives—Sarin Brothers, New Delhi, pp. 225 Price Rs. 50/-

Paper II—Management of Public Enterprises—

The syllabus was changed and re-drafted as under—
Genesis of Public enterprise, public undertakings distinguished from private undertakings.

The role of public enterprise under different economic systems. The social and economic benefits of public enterprises in the present day economy with special reference to India.

Patterns of Public enterprise—public corporation, Government companies, quasi. corporation, Departmental undertakings, control Boards, commodity Boards/Commission, Joint Sector undertakings.

Governing Boards -Composition, size and tenure, functions and powers, internal organisation. varied representation, decentralization, delegation of authority, span of control, Line and staff relationship, role of civil servants.

Financial Administration—Sources of finance, debt equity ratio. state of capitalization.

Personnel Administration :—Labour-Relations, Joint Consultative Committees and Collective bargaining, work-

ers, participation in Management, wage and salary administration as compared with private sector undertakings development of regular management cadre.

Evaluation of Performance of Public Enterprises :

Evaluation and the criteria of efficiency, output and price policy, purchase and sale policy, inventory policy, profit policy.

Public Accountability—Parliamentary, presidential and ministerial control, Governmental directives and informal contacts, autonomy of public enterprises in theory and practice, social audit. bureau of public enterprises.

Comptroller and Auditor General's Control. efficiency audit, users' Committees.

Management of Public Relations in Public Enterprises—Critical appraisal of working of public enterprises in India.

Specific studies—Organisation and working of

(i) Air India.

(ii) Rajasthan State Road Transport Corporation (RSRTC).

(iii) Steel Authority of India (SAIL)

(iv) Rajasthan Industrial and Investment Corporation (RIICO).

(v) Tennessy Valley Authority (TVA) USA.

* Books Recommended :

1. शर्मा, जर्मा व सुराणा : भारत के लोक उद्योग (रमेश ब्रुक डिपो, जयपुर) ।
2. के०एल० गुप्ता : भारत में लोक उद्योग (नवयुग साहित्य सदन आगरा) ।
3. Khera, S. S.—“Government in Business.
4. Om Prakash—Theory and Working of State Corporations.
5. Gupta R. R.—Issues on Public Enterprises in India.
6. Ramnadhan V. V.—Control of Public Enterprise.
7. Chanda A—Indian Administration.
8. Krishna Menon—Committee Report on State undertakings (Nov. 59).
9. Gorwala, A.—Report on the efficient conduct of State Enterprises.
10. Hanson, A.H.—Public Enterprise—A study of its organisation and Management in various countries.
11. Ramandhan V.V.—Structure of Public Enterprises in India.
12. Laxmi Narain—Public Enterprises in India.

Group II—*Human area* :

Paper I—Personnel Management and industrial Relations. The Syllabus was changed and re-drafted as under :—

Introduction—Organisation and functions of Personnel Department in the organisational set up of a concern, Personnel Policy.

Procuring Human Resources—Job-Analysis and Human resource requirements, Recruitment and Selection, Psychological Tests and identification of management talent, Man power planning.

Human Resource Development—Induction and Training, Developing Skills, Performance Appraisal and Management by objectives, Merit rating, Career Development, Communication and Counselling.

Compensation—Bases of Compensation, Methods of Job evaluation, variable compensation—Individual and group, supplementary compensation—Fringe benefits.

Integration—Nature of human resource, Motivation, Human and Organisational conflicts, causes of industrial unrest, Grievance procedure, handling discipline, conflict resolution.

Collective Bargaining—Types and process of collective bargaining, A Philosophy of labour management relations.

Separation—Separation processes—Strike, Layoff, Layoff, out placement, Retrenchment, Retirement, Discharge.

Industrial Psychology—Human Relations—approach, Interpersonal relations. Psychological determinants of industrial efficiency, Organisation of employers and workers. Recent trends in Industrial relations, Personnel Management in Indian perspective.

Books recommended :

1. Flippo, Edwin B.—Personnel Management. Mc Graw Hill, International Book Company, 1981.
2. Scott, Clothing and Spriegal—Personnal Management—Mc Graw Hill.
3. Yoder Dale : Personnel Management and Industrial Relations.
4. Indian Institute of Personnel Management : Personnel Management in India.
5. Lakaria : Personnal Administration and Labour Relations in India.
6. एच० नार्वकोट : कामिक प्रवन्ध, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर ।

7. डेल पोडर : क्रान्तिक प्रवन्ध तथा औद्योगिक सम्बन्ध, (अनु०) विहार ग्रन्थ अकादमी, पटना ।
8. जर्मी, जर्मी एवं मुराणा : नैविकर्गीय प्रवन्ध व औद्योगिक सम्बन्ध (रनेज बुक डिपो, जयपुर) :
9. अग्निहोत्री : भारत में औद्योगिक सम्बन्ध ।
10. अग्रवाल एवं पोरवाल : नैविकर्गीय प्रवन्ध (नवभुग साहित्य नदन, आगरा) ।

Periodicals :

1. Personnel—American Management Association, New York.
2. International Labour Review, ILO Publication.
3. Industrial Relations : Indian Institute of Personnel Management. Calcutta.

Group III—Marketing Area :

Paper—I Foreign Trade Management :

The nomenclature of this paper was changed from foreign Trade Management to *International Marketing*.

Paper—II Marketing Research :

In para 4 the following topics were added after the words 'Brand Barometer'—

Inventory audit of Retailers' Store, Laboratory Shop and Product Testing.

The following book was added at Serial No. 8.

डा० पी०के० श्रीवास्तव : विपणन शोध—राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर ।

Group IV—Finance Area :

Paper—II Financial Management and Control :

The following book was added at Serial No. 6.

अग्रवाल तथा अग्रवाल : वित्त प्रवन्ध

Paper—IX—Essay and Comments :

Part (A) Essay—

The following essays were prescribed :—

1. Public Distribution in India.
2. Professionalisation of Management in India.
3. Joint Sector in India.

4. Problems and Challenges of Public Enterprises in India.
5. Industrial Entrepreneurship in India.
6. Workers' Participation in Management.

Part (B)—Comments

The following books were prescribed—

1. डेल योडर (हिन्दी अनुवाद) कार्मिक प्रवन्ध तथा औद्योगिक सम्बन्ध, विहार हिन्दी ग्रन्थ अकादमी, सम्मेलन भवन, कदमकुआ पटना—800003 ।
2. डा० जगन्नाथ मिश्र—आर्थिक सिद्धान्त एवं व्यावसायिक संगठन, विहार हिन्दी ग्रन्थ अकादमी. सम्मेलन भवन, कदमकुआ, पटना—800 003 ।
3. हेगर्न बुश—(हिन्दी अनुवाद) सामाजिक अर्थशास्त्र केन्द्रीय हिन्दी निदेशालय, आर. के. पुरम (नई दिल्ली) ।
4. Sharu Rangnekar—In the Wonderland of Indian Managers' (in English)—Vikas Publishing House Ltd., Daryaqaanj, New Delhi.
5. Prakash Tandon—Beyond Punjab (in English).
6. Peter F. Drucker—The Practice of Management (in English) Harper, New York, 1954.

APPENDIX—‘C’

(*Ref. Res. No. 6 (V) of the Minutes*)

M. Phil. Examination, 1986

Paper—I : Organisational Behaviour :

The syllabus was changed and re-drafted as under :—

Management A behavioural approach.

Perception and Learning.

Personality Development and Theory.

Theories of Motivation—Content and Process Theories
Job-enrichment.

Sensitivity Training.

Managerial Grid, Force Field Analysis.

Fielders Contingency model.

Bureaucracy.

Group Dynamics.

Brief Study of contemporary behaviourists—

Herold J. Leavitt, Renesis Likert. Skinner,

Deci, James G. March, Herbert A, Simon, Victor
H. Vroom. W. Porter and E.E. Lawler, Arnold
S. Tahnenbaum.

Paper—II : Research Methodology and Pedagogy :

The nomenclature of the subject was changed to

“Business Research Methodology and Pedagogy”

Add— in line 10 after ‘size of the sample’

“Sampling of variagles.

in para 3rd after the word coding—“Classification”

In Para 1 at the end—“scaling techniques”.

Books were recommended as under in place of old
ones.

1. Clover, Vermon T. and Belsley, Harold L. : Business Research Methods.
2. Emory, C. William—Business Research Methods.
3. Deming W.E. : Sample Design in Business Research.
4. Goode, William J. and Hatt, Paul, K. : Methods in Social Research.
5. James, H.J. Harold : The Business Research Paper
6. Kothar, C.R. : Research Methodology.

7. Kress, George : Business Research Process.
8. Lesikar, Raymond V. - How to write a report your boss will Read and Remember.
9. Murdick, Robert G. : Business Research : Concept and Practice.
10. Parten, Mildred : Surveys, Rolls and Samples—Practical Procedures.
11. Rigby, Paul H. : Conceptual Foundations of Business Research.
12. Young, Pauline V. : Scientific Social Survey Research.
13. विनय मोहन शर्मा : क्षोब प्रविधि—नेशनल
14. डा० विश्वनाथ प्रसाद : अनुसंधान के मूल तत्व
15. उदयभानु सिंह : अनुसंधान के मूल तत्व
16. डा० सत्येन्द्र : अनुसंधान
17. डा० सावित्री सिन्हा एवं : सम्पादित : अनुसंधान की प्रक्रिया
विजयेन्द्र (स्नातक)

Paper III—Area Study :

Finance Area :

The Articles at Serial Nos. 4 and 5 to be replaced as under :—

4. Chattopadhyaya, P.—“Company Deposits and Convertible Debentures”—Eastern Economic, January 1, 1982 Vol. 78 No. 1 Pages numbered 25-28.
5. Sundaram, S. Kumar—“Corporate Take overs—The Indian Eastern Economic & Political Weekly Vol. XVIII No. 23 June 4, 1983 PP. 1023-1027.

Marketing Management :

The articles at Serial Nos. 3 and 4 to be replaced as under—

3. V.L —“The Strategy of Market Segmentation” Economic Times, June 8, 1983.
5. “The Growing Rural Market in India”—Chairman’s Speech at Annual General Meeting of Hindustan Lever Limited, Economic Times June 27, 1983.

Institutional Management :

Management of Public Enterprises :

The articles at Serial Nos. 4 and 5 to be replaced as under :—

4. Om Prakash—"Review of Research Methodology and Information Needs"—Institute of Public Enterprise Journal, July—Sept., 1982 PP. 1-19.
5. Bhalla, G.S.—"Survey of Theory and Practice in Public Enterprise Pricing"—Institute of Public Enterprise Journal Vol. V. No. 4 October—December, 1982 pp. 49-49.

Corporate Management :

- A. The Book to be replaced as under :
Taimni, K.K. (Ed.) Training and Development of Human Resources in Cooperatives—Sarin Brothers, New Delhi, 1979 pp. 225 price Rs. 50.
- B. The article at serial No- 4 to be replaced as under :—
4. The Jeantet, Thierry—"New Communication Technology and its possibilities for the social economy"—Review of International Cooperation, I.C.A., Switzerland Vol. 75 No. 4, 1982 p.3.

APPENDIX—D

(*Ref. Res. No. 6 (I) of the Minutes*)

I—YEAR

Business Organisation :

Nature and Motives of Business, Profit and service motive, social responsibility of business Development of Entrepreneurship, Rationalization and Scientific Management, Combination Movement.

Methods and sources of Financing Business.

Advertising and Publicity.

State in relation to Industry—Public, Joint Sector Enterprises system, Small Scale Industries DICS.

Labour Management—Methods of Wage payment.

Location and Plant Layout.

Workers' participation in Management.

Stock Exchange and Produce Exchange.

Note : —The students desiring to offer Steno-typing in III year will have to study the subject from I year. There will be an Examination in the subject at the end of the year as per scheme of the Examination and the student shall be permitted to continue the subject in II year, if he note through the Examination.

II—YEAR

PAPER—II

Commercial and Industrial Law :

- (1) Law of Contracts (including Indemnity. Gaurantee Bailment, Pledge, Agency).
- (2) Sales of Goods Act.
- (3) Partnership Act.
- (4) Negotiable Instruments Act.
- (5) The Factories Act.
- (6) Industrial Disputes Act.
- (7) Rajasthan Shops and Commercial Establishment Act, 1958.

PAPER—III

Management :

Meaning and Nature of Management, and Human Relations movement, an elementary study of functions of Management :—

- (a) Planning—Nature and importance, steps: planning premises, Limits of planning, Types of planning, criteria for effective planning.
- (b) Organisation : Nature, Purpose, Organisation as process, Organisation Structure and Organisation Principles.
- (c) Coordination—Meaning and importance, Coordination and Cooperation, Principles of Coordination, Self-Coordination, process of Coordination.
- (d) Motivation—Definition : Importance and types : Maslow's theory of Motivation. Herzberg's Two factor Theory of motivation.
- (e) Control—Definition, Meaning and Importance, process of Control, Criteria for effective control system; General idea about tools of control.

An elementary study of functional areas of Management.

1. Personnel Management—The meaning and Importance of personnel function, organisation and functions of personnel Department.
2. Marketing Management—The meaning and Importance of Marketing function, Marketing concept, marketing Research, Channels of distribution, product planning, price policy promotion strategies.
3. Production Management—The meaning and Importance of production function, production planning and control Quality control, productivity—Meaning and Factors.
4. Financial—The Importance of Finance Function and position of Financial Manager or Controller Capital structure, cost of capital and concept of working capital.

Books Recommended :

1. Richard, Hartman, Tuwence P. Hogan and Jhon J. Wholihan—Modern Business Administration—D. B. Taraporwala Sons and Co. Private Ltd, 210, Dada Bhai Naroji Road, Bombay-400001 1975 Price Rs. 10/-.
2. Chatterjee, Satya Saran—Introduction to Management.
3. Banerji, Mritunjoy—Business Administration.
4. Mathur B.S.—Principles of Management.

Note :—The students desiring to offer Steno-typing in III Year will have to study the subject in second year also. There will be an examination in the subject at the end of the year as per the scheme of the Examination and a student will be permitted to continue the subject in III Year, if he gets through the examination.

The Scheme of Examination for II Year is as follows :

Paper I—Shorthand in English/Hindi : M. Marks 50.

Subject matter of Dictation : A passage, Duration of Dictation : 5 minutes, Duration of transcription : 1 hr. Speed of Dictation : 70 words per minutes.

Paper II—Typewriting in English/Hindi : M. Marks 50

Subject matter of typing : A passage.

Speed : 25 words per minute in Hindi
30 words per minutes in English
Duration : 1 hour.

Note :—It will be compulsory to obtain atleast 25% marks in shorthand (i.e. $12\frac{1}{2}$ marks) English or Hindi) in order to pass the Examination.

III Year (Candidate to offer any two papers)

Paper IV.

Company Law and Secretarial Practice.

A. *Company Law.*

Definition and assential characteristics, kinds of companies—private and public, Government Co. provisions regarding incorporation and Raising of Capital through shares and Debenture public deposits, privileges and concessions of a private Company promoters, Memorandum of Association and Articles of Association Prospectus, statement in lieu of prospectus, deemed public company, Membership of a company. Alteration and reduction of share capital, Management of Companies, Board of Directors Managing Director, Managerial Remuneration, powers, position and responsibilities of Director binding up of companies, prevention of oppression and mis-management. Provisions pertaining to investment by non-resident Indians.

B. *Secretarial Practice :*

The position of the Company Secretary in the Organisation Structure of a Corporate Enterprise, Duties of a Company Secretary, problem of Professionalization of Management, Share of Financial Insitutions in the Captial of the Company.

Law. Practice and procedure relation to :

- (i) Statutory Books
- (ii) Allotment of shares
- (iii) Forfeiture of company shares
- (iv) Transfer and Transmission of shares
- (v) Payment of Dividend

- (vi) Compay Meetings—Resolutions, Notices Agenda, minutes.
- (vii) Chairmans Speech
- (viii) Directors' Report.

Paper V—INSURANCE

1. Meaning of Insurance—Social and Economic significance of Insurance—Role of Insurance in the development of Commerce and Industry, Basic Principles Insurable interest, utmost good faith, Indemnity, subrogation, Contribution, Cause proxima. Insurance & Bagering. Types of Insurance contracts.
2. Procedure in Issuing Insurance policies from proposal to policy—physical and moral hazards, proposal forms, policy forms.
3. A General study of the Insurance Act, 1938 and LIC of India Act, 1956.
4. Basic elements in Life Insurance—premium—Calculation of premium—underwriting, mortality Tables, Importance of Acturial Science in Insurance, Renewals, Average Clause, Reinsurance, Double Insurance.
5. Some Important plans of Assurance ; Endowment assurance, whole life Assurance, Suitability of an assurance plan. salary savings scheme, Non-Medical insurance—Group Insurance—Superannuation Schemes.
6. Settlement of claims under Assurance—Claims in General, Maturity Claim—Claim by death—Evidence of title, Death of nominee, minors, lunatics—Insolvency Necessary certificates, Ex-gratia claim payments.
7. Life Insurance Organisation—The organisation and its development before and after nationalisation, organisational set up of LIC, Committees of Corporation—Main functional areas of life Insurance—Central Office of LIC—Zonal offices of LIC. Divisional offices of LIC, Branch offices of LIC Insurance Agents and their working Rights and Duties of an Agent—Termination of Agency—Licence—Disqualifications—Section 44 of the Insurance Act. Field Organisation, Role of Development Officers.

Nationalization of General Insurance—The General Insurance Business (Nationalization) Act, 1972. A brief study of the role and Activities of GIC of India and its subsidiaries in relation to various types of general insurance policies.

National Insurance Co—Calcutta.

New India Assurance Co.—Bombay

Oriental Fire and General Assurance Co.—

NEW DELHI.

United India Assurance Co.—Madras.

III Year—Paper VI

OFFICE MANAGEMENT AND SALESMANSHIP

SECTION—A

Office Management :

Office—Meaning, importance and functions. relationship with other departments, organisation structure of an office.

Office Environment—Location, accommodation, planning and Layout, objectives and principles of a good office layout flow of work—lighting, ventilation, furnishing and other physical amenities and psychological considerations.

Procedure for efficient handling of office work, handling of inward and outward mails, internal communication forms—design and use, forms and stationary control, typing and duplication. Maintenance of records, filing and indexing of records, office systems and routine work, simplification work measurement and control—O & M office manual, office report, control of office costs.

Office machines and equipment—advantages and limitations uses of modern office machines, duplicating accounting, calculation and communication. -

SECTION—B

1. Salesmanship—Introduction, meaning of salesmanship, Salesmanship & Sales Management, types of salesmen, nature of salesmanship, Board and trained salesman, salesmanship—art or Science.
2. Sales organisation—meaning, need, importance and principles of sales department, organisation of sales Department, functions, structures, Administration of sales organisation, sales Manager—Importance, Qualities, duties, functions, responsibilities.
3. Process of sales—prospecting, awakening interest, appeal to buying motives, demonstration of goods, window display, different types of customers, reaction point sales, resistance, meeting of customers, objection servicing.
4. Salesman—Duties. Responsibilities, Qualities. Recruitment, Selection and Training of salesman contents

and principles of good training, scheme and methods of training, supervision and control of salesman, methods of remuneration, motivating salesmen control and supervision of salesmen. Appraisal of Salesman's performance.

Third Year of T. D. C. Commerce

Paper VII

Steno-typing in English or Hindi,

Maximum marks : 100

Min. Pass marks : 36

It will consist of two papers of 50 marks each

Syllabus :

Paper I—Shorthand

1 Hour duration

marks 50

Writing in shorthand a passage for five minutes carrying 30 marks and a letter for three minutes carrying 15 marks, with an interval of 5 minutes in between, to be dictated at the speed of 80 words per minutes to be directly transcribed on the type writer within one hour. The time of dictation and interval will not be included in this period of one hour. 5 marks out of 50 marks shall be reserved for correct outlines in shorthand :

Note : It will be compulsory to obtain at least 25% (i.e. 12½ marks) in shorthand (English or Hindi) in order to pass the Examination in Steno-typing.

Paper II—Speed and Efficiency Test in Typewriting in English/
Hindi. —50 marks

Paper I—Speed Test :—Typewriting a hand written passage/letter at a speed of 40 words per minutes in English and 30 words per minutes in Hindi for a period not exceeding 10 minutes. The actual time taken by the candidate shall be noted on the type-sheet of the candidate concerned so as to enable the examiner to calculate his speed.

Part II—Efficiency Test

Max. marks 25

Typewriting a handwritten letter containing 200 words with a maximum of 15 languages mistakes therein. The candidate will be required to correct these mistakes and type the letter correctly in a correct form and the time allowed shall be 30 minutes.

Notes :—1. The teaching in shorthand and typewriting will be provided at the first year and second year levels of the course also at the rate of 6 periods per week for shorthand and 3 periods per week for type-writing.

2. In first year and second year also the University shall conduct Examination of the candidates. The speed of shorthand dictation shall be 60 & 70 words per minutes respectively. In first year and Second year the dictation shall be transcribed in the candidates own handwriting. The speed in English typing in first year and second year shall be 30 and 35 words per minutes and in Hindi typewriting 25 & 30 words per minutes respectively. The students failing in the examination will not be admitted to the Steno-typing course in the succeeding year.

The examination in Steno-typing shall be conducted in the presence of a supervisor appointed by the University. The said supervisor shall be a person qualified to be an examiner in steno typing (English/Hindi) and shall be external to the college concerned.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN PHILOSOPHY HELD ON 20TH SEPTEMBER, 1983
AT 12.00 NOON IN THE V.C. SECRETARIAT,
UNIVERSITY OF RAJASTHAN, JAIPUR.

Present :

1. Prof. Daya Krishna (Convener)
2. Shri H.S. Ughra
3. Shri J.C. Mehra
4. Dr. D.R. Jatava
5. Mrs. Shakuntala Bhargava.
6. Dr. K.C. Sogani
7. Dr. L.R. Joshi

1. Under Section 24(E) (8) of the University Act, the Board appointed Professor Daya Krishna, Head of the Department of Philosophy, University of Rajasthan, Jaipur, as Convener of the Board of Studies in Philosophy.

2. Under Section 34(iv) (4) of the University Act, the Board elected Shri J.C. Mehra, Head of the Department of Philosophy, M.S.J. College, Bharatpur, as member other than the Convener to serve on the committee for selection of examiners in the subject for the session 1983-84.

3. The Board scrutinized the statement of qualifications and teaching experience etc. of teachers, received from the University Teaching Departments, University Colleges, affiliated institutions and other Universities for inclusion in the revised panel of examiners and revised the same as per S. 25 (2) (a).

4. The Board discussed the reports of examiners and question paper sets

5. With reference to modification made by the Syndicate in Resolution No. 26, dated 24/25 May, 1983 of the Academic Council that "each College shall hold a home examination for the Second

Year T.D.C. class and the question paper for the said examination shall be supplied by the University", the Board was of the opinion that :

1. The above modification should have been referred to the Academic Council for its opinion before formulating it.
2. the said modification goes against the spirit of home examination scheme and suggests instead that the question papers for the said examination be set by the respective colleges concerned and a copy of the question papers be sent to the University for information and record.

With regard to the syllabuses for the Degree, Honours, P.G. and M Phil. examinations, the Board recommends that the existing syllabuses may be continued for these examinations. However the Scheme of P.G. Course for paper IX has been suggested as per Appendix I for the exam. of 1985.

6. The Board recommends that the syllabi of Philosophy should be printed both in English and Hindi.

7. The Board noted letter No. F. 3-29/80 (CP) II, dated 18.2.1982 from the Secretary, U.G.C. regarding reviewing of prescribed text books and other reading materials in History and other subjects.

8. The Board noted D.O. letter No F. 4.19/82 (ER), dated 19.1.1983 from the Chairman, University Grants Commission, New Delhi, regarding examination reforms.

9. The Board considered letter No. F(3)/2/CP, dated 28.7.82, from the Secretary, UGC, New Delhi.

In this regard the Board regrets that none of the philosophical disciplines has been included as a subject. This may be brought to the notice of the UGC by the University.

10. It was brought to the notice of the Board that the mandatory restriction on the choice of combination of optional subjects

which can be taken up with philosophy issued by the Registrar to the affiliated Collages is in contravention of the academic freedom of institutions/students to offer combinations which they feel academically desirable for them. The Board expresses grave doubts as to the formal propriety of the Registrar in issuing such institutions and recommends that such restrictions, if required for administrative reasons, be left to the judgement of the institutions concerned.

The meeting ended with a vote of thanks to the Chair.

(Daya Krishana)
Convener

APPENDIX—I

(Ref. : Res. No. 5 dated 20.9 1983 of B.O.S. in Philosophy)
(Academic I)

M.A. Philosophy :

There shall be nine papers in all.

The nine papers will be as under :—

(I) Collegiate candidates :—

There shall be a IX paper of 100 marks called—
“Dissertation” or “Term papers and discussion”.

Paper IX

The ninth paper, to be called as “Dissertation” or as “Term Papers and discussion” will be as follows :—

I—Dissertation :

The paper shall consist of 100 marks. The candidate will be required to write a dissertation under the supervision of qualified Philosophy teacher on a Philosophical problem. The dissertation should be in the range of 50 to 70 typed pages. The dissertation will be independently evaluated by two examiners other than the supervisor appointed by the Committee for the selection of examiners, and the average of the marks awarded by the two will be taken into account. The dissertation shall be type-written and submitted in duplicate so as to reach the University office three weeks before the commencement of the examination.

OR

II—Term Paper and Discussion :

The paper shall consist of two parts of 50 marks each.

In the first part the candidates are required to submit four type-written term papers, on philosophical issues, written under the supervision of qualified teachers. The term papers not exceeding 15-20 pages each, will have to be submitted in duplicate to the University office three weeks before the commencement of the examination. The term papers will be evaluated by the supervisor and one more examiner appointed by the Committee for the selection of the examiners. Average of awards, separately given by the two examiners, would be taken into account.

In the second part, also of 50 marks, the student's ability to discuss philosophical problems would be judged. For this purpose regular seminars would be held in the department. At least eight such seminars should be held for the purpose, four in each session of M.A. Previous & Final. The seminars would be judged by two teachers and the average of marks given by the two

would be counted. Records of each such seminar would be kept by the Heads of the Departments concerned.

Note : Non-Collegiate candidate may offer as IX paper any of the paper from any of the groups that are given in the main body of the syllabus.

The students may profitably consult Paul Edwards' (ed) Encyclopaedia of Philosophy for all papers.

Sd/-
(Daya Krishna)

दिनांक 1 अक्टूबर, 1983 को सम्पन्न दर्शन एवं व्याकरण अध्ययन मण्डल की संस्तुति संख्या 3 एवं 8 के सम्बन्ध में विचार करने हेतु दिनांक 9-2-84 को मध्याह्न 12 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न दर्शन एवं व्याकरण अध्ययन मण्डल की बैठक का कार्यवाही विवरण :

उपस्थिति :

1. श्री चण्डीप्रसादाचार्य (संयोजक)
 2. श्री विश्वनाथ मिश्र
 3. श्री सीताराम शास्त्री
 4. श्री शीतल चन्द्र जैन
 5. श्री शंकर प्रसाद शुक्ल
- श्री पुष्कर दत्त शर्मा (विशेष आमन्त्रित)

1. अध्ययन मण्डल ने सन् 1983 में सम्पन्न हुई संस्कृत अध्ययन संकाय की विभिन्न परीक्षाओं के प्रश्न पत्रों एवं परीक्षकों के प्रतिवेदनों का अवलोकन कर संस्तुति की कि इस स्थगित बैठक में इतनी मुदीर्घ अवधि के बाद भी केवल दस (10) परीक्षा प्रतिवेदन ही प्रस्तुत किये गये। सभी प्रतिवेदनों के प्रस्तुत न होने से सभी सदस्यों ने खिन्नता व्यक्त की। विशेषतः संकाय अधिष्ठाता श्री विश्वनाथ मिश्र एवं संयोजक श्री चण्डीप्रसादाचार्य के प्रतिवेदन भी न प्रस्तुत करने पर आश्चर्य व्यक्त किया गया।

2. परीक्षा समिति की बैठक न करने का यद्यपि स्पष्ट उल्लेख था। तथापि ऐसा ज्ञात हुआ है कि परीक्षा समिति की बैठक हो चुकी है। सम्भवतः यह परीक्षाओं की सन्निधि को देखकर ही किया गया है। परन्तु भविष्य में अध्ययन मण्डल के सुझावों का ध्यान रखा जाय।

3. अध्ययन मण्डल ने संस्कृत अध्ययन संकाय की निश्चय संख्या 11 दिनांक 8 जून, 1983 के संदर्भ में सचिव, विश्वविद्यालय अनुदान आयोग के पत्र क्रमांक फा-3-29/80 (सीपी) 11 दिनांक 9 मार्च, 1983 जो कि स्वतन्त्रता आन्दोलन में किये गये त्याग के इतिहास को पाठ्यक्रम में सम्मिलित

करने के सम्बन्ध में है पर विचार विमर्श कर यह निर्णय लिया कि "सामान्य संस्कृत" के अन्तर्गत संस्कृत साहित्य के इतिहास विषयक प्रश्न पत्र में "आधुनिक भारतीय दर्शन" महात्मा गांधी, महर्षि अरविन्द; लोकमान्य तिलक, आचार्य विनोबा भावे के दार्शनिक विचार और जोड़े जाये तथा इसके लिये 10 अंक निर्धारित किये जाये। त्रिवर्षीय शास्त्री पाठ्यक्रम के द्वितीय वर्ष शास्त्री के "सामान्य संस्कृत पाठ्यक्रम में संस्कृत साहित्य एवं भारतीय संस्कृति के इतिहास के अन्तर्गत "आधुनिक भारतीय दर्शन" जोड़ा जाय।

ह०/-

चण्डीप्रसादाचार्य

MINUTES OF THE MEETING OF THE ADHOC
COMMITTEE OF COURSES IN SINDHI HELD
ON 4.10.1983 AT 12.00 NOON IN SOCIOLOGY
DEPARTMENT, UNIV. CAMPUS, JAIPUR.

Present :

1. Professor Ram Ahuja - *Convener*
2. Mrs. Sushila Motwani
3. Dr. Motilal Jotwani

Proceedings of the Committee

1. The Committee scrutinized the names of the teachers for inclusion in the revised Panel of Examiners and included some new names (Appendix I) in the Panel.
2. The Committee once again decided that the University may be requested to get the question-papers printed by a Sindhi Press and not by Urdu Press like last 2-3-years.
3. The Committee decided to recommend the following course of study and text books for the various examinations of 1986.
 - (i) I year T.D.C. (Pass Course) Exam. 1986 No Change
 - (ii) II year T.D.C. (Pass Course) Exam. 1986
 - Paper I— No Change
 - Paper II— No Change
 - (iii) III year T.D.C. (Pass Course) Exam. 1986
 - Paper I— No Change
 - Paper II— No Change
4. The Committee suggested a sub-committee of following members for revising the M.A. Courses (Previous & Final).
 1. Professor Ram Ahuja
 2. Dr. M.K. Jetley, Delhi
 3. Dr. Moti-Lal Jotwani, Delhi
 4. Mrs. Sushila Motwani, Ajmer.

It was suggested that the University be requested to call the meeting of the above Sub-Committee in the 3rd or 4th week of November, 1983.

The meeting ended with a vote of thanks to the Chair.

Sd/—
(Ram Ahuja)
Convener.

Adhoc Committee of Courses in Sindhi
University of Rajasthan, Jaipur.

APPENDIX—I

(Ref : Minutes of the meeting of the Adhoc Committee of Courses in Sindhi, held on 4.10.1983 at 12.00 Noon in Sociology Department, University Campus, Jaipur.)

Panel for Examiners in Sindhi

<i>S.No. Name of the Examiner</i>	<i>Address</i>
1. Dr. S.M. Jhangiani (22 yrs. experience)	2/11, Kalkaji Extension, New Delhi—110 019.
2. Dr. Parso Gidwani	Lecturer in Linguistics, Sindhi Dictionary Project, Decan Coll PUNE 16.
3. Dr. Kanhaiya Lal Lekhwani	Lecturer in Sindhi, W. R. L. C. Decan College, Pune—6.
4. Dr. Narayan Bharti	Lecturer in Sindhi, R.K. Talreja College. Ulhasnagar—3 (Dist. Thana) Maharashtra.
	Residential Address : 56, Hira Cooperative Housing Society Near Telephone Exchange Ulhasnagar—3.
5. Prof. Hiro Shewkani	Head of Sindhi Department, R.K. Talreja College, Ulhasnagar—3. (Dist. Thana-Bomby-Maharashtra)
6. Prof. Ram K. Sharma	BK. No. 1156/3-4, Pawai Chawk, Ulhasnagar-3.
7. Professor Mohini Thakur	Head of Sindhi Department, Somaiya College. Vidya Vihar, Bombay.
8. Dr. Moti Lal Jotwani	Head of Sindhi Department, Deshbandhu College (Evening). Kalkaji, New Delhi.
	Residential Address B-14, Dayanand Colony, Lajpatnagar—4, New Delhi—110 024.
9. Dr. Santdas Jhangiani	2/11, Kalkaji Extension, New Delhi 110 019.
10. Prof. Satramoa Juriyasinghari Sayal	Sayal Bhavan, Old Vadej, Ahmedabad—13.
11. Pritam Varyani	Lecturer in Sindhi, W. R. L. C., Dean College, Pune—6.

- | | |
|------------------------------|--|
| 12. Mr. Arjun Shad | Reader & Head in Sindhi, Bombay University, Bombay. |
| 13. Mr. Naraindas Bhambhani: | Nagina Bagh, Ajmer. |
| 14. Ishwari Jotwani | Lecturer in Sindhi, Saint Mira College, Pune. |
| 15. Mrs. Meena Rupchandani | Lecturer in Sindhi, Chandi Bai Mansukhani College, Ulhasnagar-3. |

Sd—
(Ram Ahuja)
Convener

Adhoc Committee of Courses in Sindhi
University of Rajasthan, Jaipur.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN EDUCATION HELD ON 28TH NOVEMBER, 1983
AT 12.00 NOON IN THE CENTRAL OFFICE,
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri B. L. Bhojak (*Convener*)
2. Dr. N. Vaidya
3. Dr. R P. Singh

N.B. :—Dr. K. Kumar. Banasthali and Dr. S. S. Mathur
Chandigarh (External Member) could not attend
the meeting

1. Under clause (iv) of Sub-Section (4) of Section 34 of the University Act, Dr. N. Vaidya, Professor, Regional College of Education. Ajmer was unanimously *elected* as member other than the Convener of the Board of Studies to serve on the Committee for selection of Examiners for the session 1983-84.

2. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers received from the University Teaching Departments, University Colleges, Affiliated Institutions and other Universities and *revised* the panel accordingly.

The Board further *authorised* the Convener to make Panel updated as and when the fresh applications from internal and external members are received.

3. The Board considered recommending courses of Study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Ordinances and Regulations :—

- (i) M. Ed. Examination of 1986,
- (ii) B.Ed. Examination of 1986.
- (iii) Summer School-cum-Correspondence Course for B.Ed.
Examination of 1986.

(iv) Shiksha Shastri Examination of 1986.

(v) II year B.Sc (Pass/Hons.) B.Ed. Exam. of 1984, 1985 and 1986.

Paper— 2 : Psychological Foundation of Education-I (Theory).

Paper—12 : Work-shop Practice-I
OR
Agriculture Practice-I) } Practical

(vi) III Year B.Sc. (Pass/Hons.) B.Ed. Exam. of 1984, 1985 and 1986.

Paper I : Psychological Foundation of Education-II (Theory).

Paper 2 : Methods of teaching Science (Theory)

Paper 12 : Work-shop Practice-II
OR
Agriculture Practice-II) } Practical

(vii) Final Year B.Sc. (Pass/Hons.) B.Ed. Exam. 1985 & 86.

Paper I : Workshop in Teaching.

Paper II : Foundation and problems of Education

Resolved to recommend as under :—

I. M.Ed. Examination 1986 —No Change

II, III & IV B. Ed./B.Ed. (SSCC)/Shiksha Shastri Examinations, 1986 :

In this connection the Board also considered the following matters referred to it by the Faculty of Education dated 19th and 20th August, 1983 :—

(i) Res. No, 3 (2) :—

“The detailed syllabus recommended by the Board for papers V and VI—Content-cum-Methodology of various subjects be referred back to the Board for review. It was also suggested that the Principals of Colleges concerned should consult the subject masters at their level regarding paper V & VI and observations or proposals, if any, be sent to Convener B.O.S. directly so that they may be considered in its next meeting.”

(ii) Res. No. 2 (5) :—

“The existing paper on ‘Social Education’ under Paper VII(a) may be retained for the B.Ed., B.Ed. (S.S.C.C.) and Shiksha Shastri Examinations of 1984 instead of the paper of ‘Non-formal Education’ for which no syllabus is so far available and the Board of Studies in Education be asked to recommend a syllabus for the said paper (viz. Non-Formal Education).”

(iii) Res. No. 11 :—

“The proposal for introducing a special Paper on Environmental Education in B.Ed. Course made by the Principal Shri Bajrang T. T. College, Deeg be referred to B.O.S. in Education for consideration alongwith the draft of the Syllabus for the said paper for which the principal be requested to supply.”

Taking into consideration of the aforesaid resolution referred to it by the Faculty and certain observations from the History subject Masters and one of Hindi Subject Master of Basic T. T. College, Sardarshahar as reported by the convener in the meeting itself.

(i) The Board *resolved to recommend* that the same Syllabi which had been recommended at its meeting on 17/18 July, 1982 *be adopted* with the modifications of only two subjects viz. Hindi & History (vide Appendix-I).

(ii) The Principal B.T.T. College, Sardar Shahar be requested to draft syllabus for Non-formal Education under Paper VII and place it directly before the Faculty of Education at its next meeting.

(iii) A special paper on Environmental Education under Paper VII sent by the Principal, Shri Bajrang T. T. College, Deeg be added in the Syllabus of B.Ed./B.Ed. (S. S. C. C.)/Shiksha Shastri Syllabuses the detailed Syllabus of Environmental Education is given at *Appendix II*.

(iv) The Board was given to under stand that there was no syllabus for “Programmed Learning”. In this connection the Board resolved that Dr. N. Vaidya, Professor,

RCE, Ajmer and Dr. R. P. Singh, Principal, JIE, Ajmer (both members of the Board) be requested to frame the syllabus of the said paper (in consultation with teachers) and Present the same directly before the Faculty of Education in its next meeting.

(v) *IInd Year B. Sc. (Pass/Hons.) B.Ed. Exam.*

(a) 1984 :

Paper 1—History of Science and Scientific Methods

Paper 2—Psychological Foundation of Education I (Theory).

Paper 12—Workshop Practice	} Practical
OR	
Agriculture Practice (As per Appendix-III)	

(b) 19 5 and 1986

Paper 1—History of Science and Scientific Method.

Paper 2—Psycho-Social Bases of Learning and Development.
(As per Appendix—IV)

(vi) *III Year B.Sc (Pass/Hons) B.Ed. Exam.*

(a) 1984 and 1985 :

Paper 1—Psychological Foundation of Education-II (Theory)	} As per Appendix- V.
Paper 2—Methods of teaching Science (Theory)	

Paper 12—Work-shop Practice-II	} Practical
OR Agriculture Practice-II	

(b) 1986 :

Paper I—Education and Indian Society.

Paper III—School Organisation and Problems of Education.
(As per Appendix VI)

(vii) *Final Year B.Sc. (Pass/Hons) B.Ed. Exam. 1985 and 1986.*

Paper I—Workshop in Teaching.	} As per Appendix-VII
Paper II—Foundation and problems of Education	

Paper IV—Core Programme for Prospective Teachers

Paper Methods of Teaching Science.

In this connection the Board further recommended that the syllabuses of II Year B.Sc. (Pass/Hons) B.Ed. Exam., 1984 and III Year B. Sc. (Pass/Hons.) B Ed. Exam., 1984 be got approved under the emergency powers of the Vice-Chancellor in view of the Urgency of the Syllabuses.

4. The Board offered no comments on the reports of examiners and Question Papers set for the examination of 1983.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(B. L. Bhojak)
Convenor

APPENDIX—I

उद्देश्य

हिन्दी

- (1) भाषा संरचना में हिन्दी भाषा तत्वों का ज्ञान देना ।
- (2) श्रवण, भाषण, वाचन एवं लेखन सम्बन्धी भाषायी कौशल का ज्ञान देना ।
- (3) माध्यमिक स्तर के लिए निर्धारित पाठ्यक्रम एवं पाठ्यवस्तु के विश्लेषण एवं समीक्षा की कुशलता का विकास करना ।
- (4) इकाई, दैनिक व सूक्ष्म पाठ योजनाओं के महत्व से अवगत कराना व निर्माण का ज्ञान देना ।
- (5) हिन्दी भाषा शिक्षण प्रणालियों के उपयोग का ज्ञान देना ।
- (6) हिन्दी की विविध विधाओं एवं उनके व्यावहारिक शिक्षण की संस्थितियों का ज्ञान देना ।
- (7) हिन्दी भाषा शिक्षण में दृश्य-श्रव्य उपकरणों के व्यावहारिक उपयोग का ज्ञान देना ।
- (8) हिन्दी शिक्षण में मूल्यांकन के महत्व, मूल्यांकन की संस्थितियों व विधियों का ज्ञान देना ।
- (9) सम्यक, प्रश्न पत्र के निर्माण का ज्ञान देना ।
- (10) निदानात्मक एवं उपचारात्मक परीक्षण के अर्थ, स्वरूप, महत्व एवं उपयोग का ज्ञान देना ।
- (11) मातृभाषा एवं राष्ट्रभाषा के रूप में हिन्दी की स्थिति से अवगत कराना ।
- (11) पाठ सहगामी क्रियाओं द्वारा हिन्दी के भाषायी विकास का ज्ञान देना ।

पाठ्यक्रम की रूपरेखा

- इकाई 1 भाषा का वैज्ञानिक स्वरूप (वर्ण विचार, शब्द विचार एवं वाक्य विचार की दृष्टि से) ।
- इकाई 2 भाषायी कौशलों के विकास हेतु निम्नांकित पक्षों के स्वरूप का अंकन एवं शिक्षण ।

(क) श्रवण (ख) उच्चारण (ग) वर्तनी (घ) वाचन (सस्वर एवं मौन) (च) अभिव्यक्ति (मौखिकी एवं लिखित)

इकाई 3 पाठ्यक्रम

- (क) भाषायी पाठ्यक्रम निर्माण के सिद्धान्त
- (ख) पाठ्यक्रम पुस्तकीय पाठ्य वस्तु विश्लेषण सिद्धान्त
- (ग) राजस्थान के माध्यमिक स्तर के पाठ्यक्रम एवं पाठ्य पुस्तकों का विश्लेषण एवं समीक्षा ।

इकाई 4 पाठ योजनाएं : आधार, प्रकार एवं निर्माण

- (क) कक्षा अध्यापन के सामान्य सिद्धान्त
- (ख) भाषा शिक्षण सम्बन्धी समस्याओं का चयन, विश्लेषण एवं समाधान
- (ग) इकाई. दैनिक व सूक्ष्म पाठ योजनाएं (माध्यमिक स्तर पर) उद्देश्य, महत्व, निर्माण के सिद्धान्त एवं प्रक्रिया ।

इकाई 5 हिन्दी शिक्षण में निम्नांकित विधियों का उपयोग :—

- (क) प्रायोजना विधि (ख) निर्देशित-स्वाध्याय प्रणाली (ग) सूक्ष्म अध्यापन प्रणाली ।

इकाई 6 हिन्दी की विभिन्न विधाओं का शिक्षण

- (क) विविध विधाओं का स्वरूप और अंतर
- (ख) गद्य शिक्षण (व्यापक एवं गहन पाठ रूप में द्रुत पाठ रूप में)
- (ग) पद्य-शिक्षण (रस पाठरूप एवं बोध पाठ रूप में)
- (घ) एकांकी शिक्षण (वाचिक अभिनयात्मक पाठ रूप में)
- (च) कहानी शिक्षण (मौखिक पाठ रूप में)
- (छ) व्याकरण शिक्षण (औपचारिक एवं व्यावहारिक शिक्षण रूप में)
- (ज) रचना—शिक्षण (पत्र रचना, निबन्ध रचना, कहानी रचना)

इकाई 7 हिन्दी शिक्षण में दृश्य-श्रव्य उपकरणों का महत्व एवं उपयोग

इकाई 8 हिन्दी शिक्षण में मूल्यांकन

- (क) मूल्यांकन का अर्थ, महत्व एवं विशेषताएं
- (ख) पाठान्तर्गत एवं पाठोपरांत मूल्यांकन

- (ग) मूल्यांकन विधियाँ
- (घ) प्रश्नों के विभिन्न प्रकार एवं रचना की संस्थितियाँ
- (च) मूल्यांकन प्रश्न पत्र का निर्माण (Blue print सहित)

इकाई 9 उपचारात्मक शिक्षण एवं निदानात्मक परीक्षण—अर्थ, स्वरूप, महत्व एवं उपयोग ।

हिन्दी भाषा शिक्षण सम्बन्धी योग्यताओं के विकास हेतु अन्य सामान्य अध्ययन की अपेक्षाएँ ।

- (क) मातृभाषा व राष्ट्रभाषा के रूप में हिन्दी का शिक्षण
- (ख) पुस्तकालय एवं वाचनालय का हिन्दी के भाषायी विकास में उपयोग ।
- (ग) पाठ सहायमी क्रियाएँ व हिन्दी का भाषायी विकास

प्रायोगिक कार्य

कोई परिवर्तन नहीं

HISTORY

1. The words 'National Integration and 'in line 3rd, Unit I, Part before "International understanding
2. To add a new Unit No. 4
Evaluation of curriculum and Text Books prescribed in History at the Secondary (Including Higher Secondary) Stage.
3. To state the serial numbers of the Units already numbered 4,5,6,7, and 8, as 5,6,7,8, and 9
4. To add "Puppet Show " in the end changed Unit 6 Aids In Teaching History, part (a)

APPENDIX—II

Environmental Education

Objectives :

1. To enable the prospective teachers to understand the problems concerning environment through multi-disciplinary approach.
2. To enable the pupil-teachers to make the students in the schools environmentally conscious.
3. To develop in them the skill of planning and organizing ecological activities in the schools so that the Children be equipped to play their part in protection and enrichment of environment
4. To enable the pupil-teachers to create environmental consciousness among the adult learners.
5. To enable them to use different techniques and materials for the effective dissemination of environmental information.
6. To enable them to conduct local surveys, arrange field trips, environmental games and hobbies.

Syllabus :

Unit I : Man and the biosphere :—

1. Ecosystems, Communities and biotic regions.
2. Problems of Modern civilization :
 - (a) Population explosion.
 - (b) Pollution—Air, Water, Noise and Waste.
 - (c) Depletion of natural resources and the need for conservation of forests wild-life, water, soil and energy.

Unit II : The nature and Scope of Environmental Education—

1. Meaning, Importance, Objectives and Philosophy of Environmental Education.
2. Scope of Environmental Education—
Multi-disciplinary approach, a fusion of subjects of science, arts and humanities.
3. Environmental Education as a subject, its curriculum; A text-books on Environmental Studies prepared by N.C.E.R.T.
4. Environmental Education through different subjects.

Unit III : Planning and Implementation of Environmental Education :

1. Environmental Education in Schools
 - (a) Primary Stage;
 - (b) Secondary Stage.
2. Environmental awareness among out of school youth and adult learners through Adult Education Programmes.
3. Environmental Education for Teachers—
 - (a) Under training and
 - (b) in-service.

Unit IV : An Action Programme for Environmental Education.

1. Problem solving and projects.
2. Ecology Club, Ecology Laboratory, Library and Publications.
3. Field trips, Audio-Visual media, Games and Simulation.
4. Social Forestry and activities of societies like Friends of Trees, W.W.F. etc.

Unit V : Looking at the Future :—

1. Destruction of environment and the Futures :
 - (a) Population;
 - (b) Foods;
 - (c) Housing;
 - (d) Education.
2. The need for a global outlook—
A Futurological approach—
UNEP and international Cooperation for Quality of life. A case for optimism.

Practicums :

Any one of the following :—

1. Survey of a village or urban slum area and Identification of its environmental problems.
2. Teaching a class on problems solving method on an environmental topic.
3. Preparation of a scrap Book of environmental pictures, articles, poems, cartoons, etc.

4. Planning the celebration of Earth Day in a School, Conducting relevant activities and preparing a report of the event.
5. Teaching the adult learners at an Adult Education Centre on an aspect of environmental Education.
6. Preparation of an annual plan of the school Environmental Programme through the Ecology Club.
7. Preparation of the format of a model Ecological Bulletin for school including short articles, poems, Cartoons, puzzles, etc.
8. Writing the script of a puppet play or dramatization on an environmental theme.
9. Critical evaluation of a book on Environmental studies prepared by the N.C.E.R.T.
10. Arrangement of the environmental games and hobbies like bird watching, herbarium etc.

Bibliography :

1. Budyko, M.I. Global Ecology, Progress Publishers, Moscow, 1980.
2. Feathers, F. and Mayur R., Optimistic Outlooks, Global Futures Network, Torono, Bombay, New York, 1983.
3. Fedorov, E. Man and Nature : the Ecological crisis & Social progress, Progress Publishers, Moscow, 1980.
4. Laptev, I, The world of Man in the World of Nature, Progress Publishers, Moscow.
5. UNESCO, Trends in Environmental Education, UNESCO, Paris, 1977.
6. Verma, V. A Text Book of Plant Ecology, Emkay Publications. Delhi. 1972.

APPENDIX—III

Second Year B.Sc. (Hons./Pass) B.Ed., 1984

Paper 1—History of Science and Scientific Method.

Scheme :

One Paper Duration : 3 hrs.

Max. Marks	100
Min Marks	36
Internal	20
External	80

o

Syllabus :

What is Science ? Origins of Science. Science of antiquity Alchemy. Bacon and the Experimental Method. Copernicus and the Planets, Galileo and Kepler, Newton and his laws of Gravitation, The nature of combustion. Development of Scientific instruments; Microscope, Telescope, Air Pump, Thermometer, Barometer and Pendulum Clock. Dalton and the Atomic Theory. Kinetic Theory. Harvey's discovery of the circulation of blood. The Germ Theory of Disease and its influence on public health Medicine and Surgery, Darwin and the Evolution Theory. Cell Theory, Reproduction. Mendel's Law of Heredity. Wohler and the Synthesis of organic substances. Theory of Electrolytic Dissociation, Enzymes, Hormones and Vitamins. Photosynthesis. The development of steam, oil, electric and atomic power. The impact of Science on Modern Life.

The following books are suggested for study :

1. The Origin and Growth of Physical Science, Vol. I and II. By Hurd and Kipling (Penguin)
2. History of Biology by Singer (Publishers-Balliere Tindall Col., London).
3. Science : Past and Present by Sherwood Taylor.
4. A short History of Science by Sedgwick and Taylor
5. Science in the 19th Century by Singer.
6. The Science of Life by Taylor (G. Rattery) (Published by Thomas and Hudson, London, 1963).

Second Year B.Sc. (Hons /Pass) B.Ed., 1984.

Paper 2—Psychological Foundation of Education—I

Duration—3 Hrs.

Total Marks	50
Internal	10
External	40

Unit 1 : General Introduction.

- (a) Meaning and Nature of Psychological Foundations of Education.
- (b) Psychology as a Science of Human Behaviour.
- (c) Fields of Psychology.
- (d) Methods of Study in human behaviour.
- (e) Contribution of Educational Psychology teaching learning.

Unit 2 : Human Growth and Development.

- (a) Meaning and nature of Human growth and Development.
- (b) Factors of Human Growth and Development Heredity and Environment, Maturation & Learning, Psychological and Social Determinants of Growth and Development
- (c) Social development, its Process and Factors—Child in family, School and Groups, Social Interaction and Development of Social Interests, Attitude and Values.
- (d) Emotional Development—Formation of Sentiments, Attitudes and Character. Control and Redirection of Emotions.
- (e) Intellectual development—Perception, Reasoning, Thinking and Imagination. Their Educational Implications.
- (f) Individual Difference and How They effect Teaching and Learning.

Unit 3 : Mental Health and Hygiens—

- (a) Meaning and Nature of Mental Health.
- (b) Psychodynamics of Human Behaviour mental mechanisms.
- (c) Behavioural Disorders their classification, cases & treatment.
- (d) Importance for the school and the role of the educational agencies in the mental health of school children.

Syllabus : B.Sc. (Hons./Pass) B.Ed. II Year 1984.

Paper 12—Workshop Practice—I

(Practicals only)

Duration : 4 hours

Total Marks 50

Internal 50

(Note : There is no external practical examination)

Wood Working :

Cutting. Measuring, Planning, Nailing, Chiselling,
Rounding, Drilling and Filing.

Wood joints.

Tools—Their use and handling.

Introduction to wood working Machines.

Fret-work, sawing, Drilling, Moulding, and Finishing,
Grinding and Sharpening.

Safety precautions and care of hand tools and Machines.

OR

Syllabus : B.Sc. (Hons./Pass) B.Ed. II Year, 1984

Paper 12—Agriculture Practice—I

(Practicals only)

Duration : 4 hours

Total Marks 50

Internal 50

(Note : There is no external examination).

Unit 1 : Soil

- (a) Structure and Texture of Soil.
- (b) Classification of Soil
- (c) Soil fertility.

Unit 2 : Manures and Fertilizers

- (a) Essential plant nutrients for plant growth.
- (b) Identification and use of common organics and Inorganic measures.
- (c) Green manuring.

Unit 3 : General

- (a) Characteristics of good seed and seed bad.
- (b) Principles of crop rotation, Fixed cropping.
- (c) Tillage operations and names of common tools and implements for tillage.

Unit 4 :

- (a) Ability to identify important seasonal flowers commonly grown in the region.
- (b) Skill in :
 - 1. Pot filling.
 - 2. Planting seasonal flowers.
 - 3. Planting Lawns, its care and managements.

Unit 5 : India's cattle problem : Feeding, breeding and artificial insemination.

Unit 6 : Characteristics of the following breeds of cows and buffaloes :

- (a) Cows : Sahiwal, Gir, Nagori, Bariyand and Crossbreeds.
- (b) Buffaloes—Murrah, Bhadawri and Neeli-Kavi

Unit 7 : Principles of feeding, care and Management of Milk animals.

Unit 8 : Importance and methods of clean milk production.

APPENDIX—IV

II YEAR B.SC. (HONS./PASS) B.ED. 1985 & 1986

PAPER 1—HISTORY OF SCIENCE AND SCIENTIFIC METHOD

Scheme : One Paper Duration : 3 Hrs. Max. Marks 100

Syllabus :

What is Science ? Origins of Science. Science of antiquity Alchemy. Bacon and the Experimental Method. Copernicus and the planets, Galileo and Kepler, Newton and his laws of Gravitation. The nature of Combustion. Development of Scientific instruments : Microscope, Telescope, Air Pump, Thermometer, Barometer and Pendulum Clock. Dalton and the Atomic Theory. Kinetic Theory. Harvey's discovery of the circulation of Blood. The Germ Theory of Disease and its influence on public health, Medicine and Surgery. Darwin and the Evolution Theory. Cell Theory Reproduct Mendel's Laws of heredity Wohler and the synthesis of organic substances. Theory of electrolytic Dissociation, Enzymes, Hormones and Vitamins. Photosynthesis. The development of Steam, oil, electric and atomic power. The impact of Science on Modern life

The following books are suggested for the study :

1. The Origin and Growth of Physical Science, Vol. I & II by Hurd and Kpling (Rneguin).
2. History of Biology by Singer (Publisher—Bailiere Tindall Col., London).
3. Science : Past and Present by Sherwood Taylor.
4. A Short History of Science by Sedgish and Taylor.
5. Science in the 19th Century by Singer.
6. The Science of Life by Taylor (G. Rattary) (Published by Thames and Hudson, London, 1963).

II YEAR B.Sc. (H/P) B.Ed., 1985-86

PAPER 2—PSYCHO-SOCIAL BASES OF LEARNING AND DEVELOPMENT

Unit I. The student teacher will :

1. Develop understanding of the developmental concept of Psychology. Educational Psychology related applications.
2. Be able to identify areas of professional work in which knowledge of Educational Psychology may be useful.

3. Develop interest and proper attitudes towards the study of this discipline.

Unit II Understanding the Learner :

The student teacher will :

1. Understand the concepts of growth, development, maturation, readiness, personality, introversion, extraversion, Similarities and individual differences.
2. Understand the psychological principles of growth and development.
3. Develop sensibility towards commonalities and differences among students.
4. Develop ability to apply the understanding gained under 1, 2 & 3 in educational situations.
5. Learn the use and interpretations of few Psychological tests.
6. Develop skills in the use of simple teacher made devices. .

Unit III The Student teacher will :—

1. Be able to define, explain, differentiate & find relations among terms related to the teaching learning process such as psycho-dynamics, Teaching, Learning and Motivation, Class Climate and group dynamics.
2. Develop understanding of how children learn & what optimum teaching-learning situations are.
3. Be able to apply the knowledge of Psychological Principles of Teaching and learning in the practice teaching situation.
4. Will develop ability to motivate the class.

Unit IV The student teacher will :

1. Develop sensibility and proper attitude towards giving special help to learners.
2. Develop an understanding of the concepts such as deviancy, guidance, counselling, creativity & adjustment, etc.
3. Develop ability to identify students needing special help.
4. Develop skills in giving help to such students.

CONTENTS**Unit I Educational Psychology as a developmental discipline :**

1. (a) A brief introduction to :
 - (i) Developmental nature of Psychology and Educational Psychology.
 - (ii) Contribution of behaviourism, Gestalt and Psycho-analysis.
 - (iii) Contribution of Piaget and Brunner.
 - (iv) Application of Psychology to (various Professional fields) and its specific relationship to education.
2. Educational Psychology for the Class-room teacher.
Utility of Educational Psychology for the teacher.

Unit II Growth and Development of the learner :

1. (a) Concept of growth, development and maturation.
- (b) Special study of (i) Physical (ii) Mental (iii) Social and (iv) Emotional development in Childhood and adolescence.

Unit III Personality :

1. (a) Concept of personality.
- (b) Shaping of personality : role of various factors.
- (c) Personality differences : *Introversion—Extraversion.*
- (d) Identification adjustment of Neurotic Children
Promoting personal and social adjustment.
- (e) Assessment of personality—various approaches.

Unit IV Similarities and differences among learners :

1. (a) Common needs and aspirations.
 - (b) Inter and Intra differences (Psycho-Social).
 - (c) Interests and aptitude
 - (d) Class room implications and commonalities and differences among individuals
2. Intelligence : Its nature and measurement.
 3. Creativity.

Unit V Teaching learning process :

1. Conditions that promote learning in the class room :
 - (a) Principles of class room Learning.
 - (b) Factors relating to theories of learning :
 - (i) Associationism
 - (ii) Classical conditioning
 - (iii) Operant conditioning.
 - (iv) Trial and Error.
 - (v) Insight.
2.
 - (a) Social Climate of the class-room.
 - (b) Group dynamics.
3. Motivation :
 - (a) Concept of motivation.
 - (b) Extrinsic and Intrinsic sources of motivation.
 - (c) How students can be motivated for learning.

Unit—VI : 1. Identification of and help in the following cases :

- (a) Gifted learners.
- (b) Slow learners.
- (c) Delinquents.
- (d) Fostering creativity.

Practicums :

Any one of the following :

1. Administering, scoring and interpreting of one group test of intelligence.
2. Tentative classification of pupils in the practice teaching classes on the basis of individual differences.
3. Preparing a sociogram and interpreting it.
4. Preparing teacher made achievement test.
5. Diagnosing learning difficulties of students.
6. Identifying the following :
 - (a) High and low achievements through intelligence & Achievement test.

OR

- (b) Students with adjustment difficulties in various areas such as home, health, school peer group etc. through personality, adjustment inventory.

Bibliography :

1. Blair : Jones and Simpson, Educational Psychology, Macmillan, New York.

2. Lindgren : Educational Psychology in the classroom, Macmillan, N.Y.
3. Skinner : Essentials of Educational Psychology-Asia Publishing House, Bombay.
4. Sorensen : Psychology in Education, McGraw Hill, N.Y.
5. Valentine : Psychology & its Bierarchy on Education, Mathewin, London.
6. Woodrow : Psychology—A study of Mental life.
7. Stephens : Educational Psychology.
8. X Peel, E.A. : Psychological Basis of Education.
9. Morris, I & Mauric, P. : Psychological Foundations of Education.
10. Moree, W. & Wingu, G. : Psychology and Teaching.
11. Mouly, G.T. : Psychology for Effective Teaching.
12. Ausell, J L. : Psychology for Modern Education.
13. Chauhan, S.S. : Educational Psychology.
14. Chauhan, S.S. : Innovations in Education.
15. Sagar and Nanda : Fundamentals of Educational Psychology

APPENDIX—V

III Year B.Sc. (Hons /Pass) B.Ed. 1984 & 1985

Paper—I : Psychological Foundation of Education II Theory

Duration	3 hrs.
Max. Marks	100
Internal	20
External	80

Objectives :

The student teachers will :

1. Be able to define, explain differentiate and find relations among terms related to the teaching-learning process such as psycho-dynamics, Teaching, learning & motivation, Class room climate and group dynamics.
2. Develop an understanding of how children learn and what optimum teaching-learning situations are.
3. Be able to apply the knowledge of psychological principles of teaching and learning in the practice teaching situations.
4. Will develop ability to motivate the class.
5. Will develop ability to maximise transfer effects of learning.
6. Learn to select and use of certain psychological tests, and interpret results.
7. Develop skill in the development and use of teacher made tests.
8. Develop sensibility towards commonalities differences among students.
9. Develop sensitivity and proper attitude towards giving special help to learners.
10. Develop skills in giving help to such students.
11. Develop ability to identify students needing special help.

Unit I : Learning. (Teaching-learning process).

1. Conditions the promote learning in the class-room.

(a) Principles of class room learning.

(b) Factors relating to theories of learning :

- (i) Associationism (ii) Classical conditioning (iii) operant conditioning (iv) Trial and Error (v) Insight.

2. Social climate of the class-room, group dynamics.
3. Motivation :
 - (a) Concept of motivation.
 - (b) extrinsic and intrinsic sources of motivation.
 - (c) how can students be motivated for learning.
4. Transfer of Learning, its implications for teaching learning.

Unit 2 : Measurement and Test construction :

- (a) Intelligence, abilities and interests, their measurement & test.
- (b) Common types of tests—written, oral and performance etc.
- (c) Construction of Tests—steps and procedure.
- (d) Test—Reliability and Validity,,

Unit 3 : Identification and help in the following areas :

- (a) Gifted learners.
- (b) Slow learners.
- (c) Creativity in Children.
- (d) Delinquency.

Practicums :

Any one of the following :

1. Administering, scoring and interpreting of one group test of intelligence.
2. Tentative classification of pupils in the practice teaching classes on the basis of individual differences.
3. Preparing teacher made achievement test.
4. Diagnosing Learning difficulties of students.
5. Identifying the following :—
 - (a) High and low achievers.
 - (b) Students with adjustment difficulties in various areas such as home, health, school, peer-group, etc.

III YEAR B.S.C. (HONS/PASS) B.ED. 1984 & 1985.

Paper 2. Methods of Teaching Science Theory :

Duration	: 3 hours
Max. Marks	: 100
Internal	: 20
External	: 80

Unit I : Objectives of Science Education :

- (a) The changing nature of science objectives, concept that objectives grow out of the nature and structure of science as a discipline and out of nature of different cultures.
- (b) Types of objectives. Bloom's Taxonomy of Educational objectives and its relevance to various science subjects.
- (c) Knowledge, understanding, application & skills objectives as detailed by NCERT.

Unit II : Science Curriculum Planning :

- (a) Concept of curriculum, its development and organization in science subjects.
- (b) Recent trends in curriculum development in India, U.K. and U.S.A.

Unit III : Learning Theories and Teaching of Science :

Basic concepts underlying the learning theories : Reinforcement, operant conditions, Insight, Productive Thinking. Piagetian Theory, and Accelerated Theory of learning.

Unit IV : Methodology of Science Teaching :

- (a) Lecture Method.
- (b) Demonstration Method.
- (c) Problem solving method.
- (d) Project Method.
- (e) Historical approach to Science Teaching.
- (f) Discovery Approach/Inquiry Approach to Science teaching.

Unit V : Unit and Lesson Planning in Science subjects :

- (a) Unit Planning.
- (b) Lesson Planning : formulation of behavioural objectives. content analysis (concepts/major point theory, laws etc.) selection of learning experiences (demonstrations/activities evaluation of learning experiences (types of questions and their characteristics).

Unit VI : Instructional Material in Science :

- (a) Printed material : Text books criteria, scope and limitation, Supplementary reference books, periodical literature, reference material (encyclopedia, dictionary and specially prepared material), programmed material.

- (b) Films, film strips, epidescope, projectors, chart, model flannel board etc.
(Preparation of instructional material should be stressed)
- (c) Use of library, community resources, laboratory materials and audio visual media be stressed
- (d) Selection, care and repair of equipment, tools and materials for construction of improvised apparatus.
- (e) Use of out door resources as school garden, aquarium, fish pond and industrial places be used extension of class room learning experiences
- (f) Use of other resources for science teaching as extension lecturers, field trips, radio broad-casts, T. V. broadcast etc.
- (g) Organization of science activities such as science clubs, Science fairs, science museum, etc.

Unit. VII : Evaluation in Science Teaching.

- (a) Concepts of evaluation, relationship between evaluation, objectives and curriculum (learning experience).
- (b) Methodology of constructing unit test characteristics of a good test.
- (c) Preparation and use of various types of test items. Objective based item.

Unit VIII : Internship :

The concept of internship should proceed the intership experiences provided to student teachers. Observations in the class room, review of purposes of internship, illustration of activites to be used including the community surveys.

Periodcally the gain in experiences by the student teachers may be reviews through seminar or discussion mthods.

Practicum :

- (a) Preparation of one unit and one lesson plant in each teaching subjects.
- (b) Planning of science laboratories in science subjects.
- (c) Preparation of one teaching aid in each teaching subjects.
- (d) Formulation and use of objective based questions to test the understanding of content of one unit plan, interpretation of data and application of principles.
- (e) Formulation of Hypothesis and testing Hypothesis from selected content of science subjects.

THIRD YEAR

Paper 12 Workshop Practice—II (Practical)

(Four periods per week)

Internal Assessment Marks : 50

(Note : There is no external practical Examination and the assessment is purely internal.

FITTING AND SHEET METAL

Measuring, Marking, Punching, Cold chiselling, Hacksawing, Filing, Drilling, Tapping, Dieing and Finishing.

Layout and development pertaining to sheet Metal work.

Marking, cutting, Folding, Raising, Bending, Wiring Hemming, Joining, Seaming Riveting, Beburring, Soldering and Finishing.

Tools-their use, care and handling. safety precautions.

OR

Paper 12—Agriculture Practice II (Practical)

Duration : 4 hours

Max. Marks : 50

Internal

Practical only 50

Crops and Vegetable Production:

1. Soil characteristics, soil minerals and their deficiency symptoms. soil testing by soil testing kits, saline and alkaline soils, soil conservation : soil tilth and plant growth.
2. Effect of weather and climate on plant growth : adverse weather conditions and crop production.
3. Need for irrigation and drainage: methods of irrigation : irrigation requirement of farm crops : water conservation.
4. Seed-bed management and cultural practices in raising the grain crops and fodder crops, at the instructional farm.

Note :

Students in group of 4 shall be required to raise one crop (Grain crop or Fodder crop) under close supervision of the teacher. They will participate in all the practices from seed-bed preparation to cultural and intercultural practices and harvesting and processing themselves. In no case paid labour should be allowed to be engaged. Complete record of cost of production shall be maintained by the students on their project note-book.

Horticulture and Ornamental Gardening.

1. Identification of annuals, perennials of herbs, shrubs, trees, Concept of landscaping, layout planning of ornamental gardens.
2. Propagation by seedage, cuttage, layerage, budding and graftage.

Animal Husbandary and Poultry Production :

1. Housing of dairy animals and poultry birds.
2. Care and Management of calves, heifers and milch animals, artificial insemination, clean milk production.
3. Care and management of day-old-chicks, growers and layers.
4. Preventive measures against following diseases of dairy and poultry :
Foot & Mouth, Haemorrhagic septicaemia, Black quarter Mastitis, Ranikhet, Coccidiosis, Coryza.

APPENDIX—VI

III Year B.Sc. (Pass/Hons.) B.Ed., 1986.

Paper I—Education and Indian Society :

Objectives :

Unit I—Pupil teacher will be able to :

- (a) define, discriminate and establish relationship between the terms commonly used in education.
- (b) identify applications of Indian Cultural perspectives and aspirations of Indian Society in Education.

Unit II—Pupil teacher will be able to :

- (a) define, discriminate, explain, compare and cite examples concerning basic concepts related to social changes.
- (b) identify factors and forces helping or hindering social changes in a community.
- (c) identify and analyse problems of modern Indian education and suggest suitable solutions/alternatives.

Unit III—Pupil teacher will be able to :

- (a) analyse school as a sub-social system.
- (b) locate and analyse available community resources for effective school Community collaboration.
- (c) identify areas of formal and non-formal programmes for effective school community collaboration.
- (d) diagnose and suggest measures for effective school programme.
- (e) identify aspirations of community and teacher's role for realizing them.
- (f) locate areas of collaboration between school and community for effective education.

Unit IV—Pupil teacher will be able to :

- (a) analyse the impact of Indian and Western philosophical thoughts on aspects of education.
- (b) examine Gandhian thought on education in relation to the Country's needs and aspirations.

Contents :

Unit I—

1. Basic concepts used in Education :
 - (a) Education, instruction, schooling, training
 - (b) aims, objectives
2. (a) Values and aspirations of present day Indian Society.
 - (b) Salient features of emerging Indian Society. Democratic social order, social Justice, secularism and their educational implications.
 - (c) Aims of education relevant to Modern Indian Society.

Unit II—

1. (a) Concepts of social changes, social mobility, social control, socialisation, modernisation, cultural lag, Indianization and social structure.
 - (b) Social change in Indian Society (Trend study).
 - * Aspects of social change in Indian—impact of social change on education and educational agencies.
 - * Education for social change—universalization of primary Education.
 - * Equality of Educational opportunities—social mobility.
 - * Education for national development—national policy of education.

Unit III—

- (a) Indian social system and the place of 'school' therein. Types of schools, public, demoninational, privately managed, state sponsored, neighbourhood schools. Patterns of relationship and problems connected with the above types.
- (b) Community school : its programme and critique school and community—community resources for formal, informal and non-formal programmes.

Unit IV—

1. Philosophical approaches to :
 - (a) Aim of Education
 - (b) Methods of teaching

(c) Curriculum

(d) Teacher—Pupil relationship with reference to :

- (i) Idealism (ii) Naturalism (iii) Pragmatism .
(iv) Geeta (v) Jain (vi) Budha.

2. Gandhian contribution to Education.

Practicums :

Any one of the following :

1. Study of trends in educational thought-future-logical, deschooling or open schools.
2. Survey of any aspect of a school of community.
3. Survey of student-aspirations in different communities.
4. Survey of impact of mass media on general education of the masses, their social and/or vocational choices development
5. Survey of available community resources for developing effective school programmes.
6. Developing a plan of action to improve the functioning of a school.
7. Organising and reporting literacy classes for Adults.
8. Organising remedial work for weaker children.
9. Survey of the status and the role (expected and performed) of the teacher in a community.

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III Year B.Sc. (H/P) B.Ed., 1986.

Paper III-School Organisation and Problems of Education.

Objectives :

Unit—I The student teacher will be able to :

- (a) Recall teachers responsibilities with respect to :
 - (i) Co-curricular activities.
 - (ii) Health Education and
 - (iii) Discipline.
- (b) Act as an organiser of extra-academic activities.
- (c) Understand his place and position in the school.

Unit—II The student teacher will be able to draw principles of effective organisation of :

- (a) School Plant.
- (b) Maintenance activities.

Unit—III The student teacher will be able to :

- (a) Understand constitutional obligations as regards education.
- (b) Identify factors conclusive to effective implementation of various school activities.
- (c) make himself aware of promotive and deterrent factors influencing.
 - (i) emotional integration.
 - (ii) indianisation of school programmes.

Unit—IV The student teacher will be able to understand Principles underlying the following :

- (a) Planning for growth.
- (b) Programme for personal and school health.
- (c) necessity of population and sex education at the school level.
- (d) guidance service.

Content :

Unit—I (i) Role of the Head master and teacher in building the 'one of the school'

- (ii) Co-curricular activities : their need, purpose and significance and organisation.
- (iii) Physical education—Need and scope of P.T. and Corrective Exercises—organisation of games and sports and yogasans.
- (iv) Discipline : Emerging concept and activities conducive to maintaining.

Unit—II 1. Facilities and services essential for the school.

- (a) Building, equipment, laboratory, library, Hostel—their maintenance and mobilizing resources.
- (b) Significant problems of secondary schools.
 - (i) Admissions
 - (ii) Assignments
 - (iii) Academic testing
 - (iv) Promotion
 - (v) Time-table
 - (vi) School records.

Unit—III Constitutional provisions on Education, Teachers Role in helping the State in implimenting them.

2. Problems faced by the nation -identification of factors affecting.
 - (a) National and Emotional integration.
 - (b) Language controversy—Possible solutions.
 - (c) Student unrest : Causes and remedial measures.
 - (d) Indianisation of Education.
 - (e) Religious and Moral Education
 - (f) Vocational preparation.

Unit—IV 1. Principles of organising the following :

- (a) Institutional Plan.
- (b) Personal and School health programme.
- (c) Population Education.
- (d) Sex Education.
- (e) Guidance services
- (f) Physical Education.

Practicums :

Any one of the following :

1. Preparation of (any one)
Annual Institutional Plan
OR
Yearly Teaching Plan
OR
Term-wise assignment Plan.
2. Survey of community with a view to locate factors influencing discipline of students/student unrest.
3. Developing a plan for maximum utilisation of school Physical resources.
4. Exploring possibilities of revising Physical training, games and sports under limited resources available.
5. Establishing a Guidance Centre in the School.
6. Maintaining records of :
Co-curricular activities
OR
Cumulative assessment record.
OR
Occupational Information needed by students.

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APPENDIX-VII

FINAL YEAR B.Sc. (H/P.) B.ED., 1985 & 1986

Paper I—Workshop in Teaching

Duration 3 Hours.

Max. Marks 100

Internal 20

External 80

Content

Unit 1 Evaluation :

- (a) Review of theory.
- (b) Evaluation—its various uses in the secondary school situation an investigation based primarily on the Demonstration School.
- (c) Principles of evaluation.
- (d) Elementary statistics and test interpretation.
- (e) Skill development in the use of the standardised and external tests.
- (f) Skill development in constructing and using teacher made tests and using the class as a laboratory.

Unit 2 Guidance :

- (a) Review of theory.
- (b) Philosophy and principles of guidance.
- (c) Aims of guidance
- (d) Evaluating the student (through performance in class and co curricular activities anecdotal and cumulative records, autobiographics and guidance essays, sociograms, career reports and observational techniques).
- (e) Uses and limitations of standardized tests and inventories in guidance.
- (f) Educational occupational information.
- (g) Group guidance.
- (h) Understanding the role of the counsellor and other specialists.
- (i) Guidance through curricular subjects, books and hobbies.
- (j) Assisting students with educational and vocational planning (explanation of the role of the career master etc)

- (k) Teaching and guiding the exceptional student (gifted, retarded, handicapped).
- (l) Teacher's role in guidance, job placement and follow-up.
- (m) Principles of parent teacher participation.
- (n) Guidance, its uses in the secondary school situation an investigation based primarily on the Demonstration School.
- (o) Skill development in applying guidance technique in the Demonstration School, analysing data and outlining appropriate teaching learning situations, counselling techniques and remedial measures.

Unit 3 Health and human relations.

- (a) Review of theory.
- (b) Importance of health an investigation of the problem of health education in the Demonstration School.
- (c) Principles of health, physical education, recreation and human relations, role of the school health service.
- (d) Skill development in planning and directing activities in health, physical education and recreation, healthy and clean environment, a wholesome diet, remedial measures against communicable diseases, periodic physical examinations, health records.
- (e) Skill development in contriving teaching learning situations to bring about better human relations in the social life of the college
- (f) The role of the teacher in the health programme.

This unit is designed to draw the professional implications from the experiences in self development and study of health problems growing out of the health sequence offered as general education. The objectives of that sequence are remain to this unit and should be used as guides.

Unit 4 Organization and administration

- (a) Review of theory.
- (b) Investigation of forms of organization in (i) the college (ii) the college classes (iii) the Demonstration school (iv) The demonstration school classes.
- (c) Principles of school organization and of class room organization.

- (d) Skill development in organizing a multipurpose school e.g. critique of the Demonstration School organisation with construction of alternative plans, well known experimental schools in India.
- (e) Skill development in organizing classes (college physical education classes and Demonstration School classes of all kinds) with special attention given to individualization of instruction and grouping.
- (f) The role of the headmaster and teacher in organisation and administration, the role of special services in the School.
- (g) Administrative organization of the Union Ministry of Education, State Departments of Education and other private and autonomous educational organisations.

Final Year B.Sc. (H/P) B.Ed., 1985 & 1986.

Paper II—Foundations and Problems of Education.

Duration : 3 hours

Max. Marks	100
Internal	20
External	80

Unit 1 : Role of philosophy as a discipline.

- (a) Role of Philosophy as a discipline.
- (b) Relationship between philosophy and education.
- (c) Different approaches to a philosophy of education idealism, realism, naturalism, pragmatism and fascist views of education.

Unit 2 : Education and the social order.

- (a) Education and economics.
- (b) Education and politics.
- (c) Education and social institutions.
- (d) Education and science.
- (e) Education as an instrument of national policy.
- (f) Education and values.

Unit 3 : The nature of education and of the educational process.

- (a) The role, aim and function of education.
- (b) Knowledge and character, vocation citizenship as aims.
- (c) The nature of the educational process.

- (d) International implications.
- (e) Education for democratic living.
- (f) Education and the problem of nation integration.
- (g) The Gandhian view of education

Unit 4 : Agencies of Education.

- (a) The home, the school, the community.
- (b) Official and non-official agencies such as Ministry of education, National Council of Education Research & Training, University Grants Commission, teachers organization, media of mass communication, citizens organisations, libraries.
- (c) Impact of science and technology on education.
- (d) The community school.

Unit 5 : Some outstanding educational experiments.

- (a) Nursery, Kindergarten, Montessori, Project method progressive Education, Dalton Plan, Shantiniketan and Basic Education.
- (b) Role of research and experimentation in education.

Unit 6 : Review of background.

A quick review of the historical background of Indian education upto 1950.

Unit 7 : Indian education.

The development and problems of Indian education under the Five year plans education and the Constitution of India. Secondary Education Commission, Expansion of educational facilities, the organizational and administration set up at various levels, professional and government agencies for promoting educational development at various levels.

Unit 8 : Community school practices.

- (a) Studying the basic characteristics of a community.
- (b) Studying the impact of community development on a community.
- (c) Investigating relationship of schools and communities.
- (d) Designing new school community relationship.

Unit 9 : Problems of education.

- (a) Discipline and democracy.
- (b) The concept, function and the future of public schools in India.
- (c) The language problem.
- (d) National Integration.
- (e) Education for international understanding.
- (f) Literacy in India and the world, fundamental education.
- (g) Educated unemployed.
- (h) Socio-economic status of teachers in India and abroad.

Note : These are only suggestive and not exhaustive, other current problems of education may be added as they arise and as considered significant.

Paper IV—Core Programme for prospective Teachers.

OBJECTIVE

- Unit I—1. The student teacher will be able to understand discriminate and use the objectives.
2. Will be able to internalise the concepts of year unit daily lesson/Home/class work planning will develop practical skills of preparing plans on given content in proper format.
 3. Will be able to use various teaching methods will be able to understand the relative advantages and limitations of their methods.
 4. Will develop skills and abilities to select appropriate methods and apply them effectively and confidently.
 5. Will be able to explain the relative importance of those devices.
- Unit II—1. The student teacher will be able to recall principles of teaching, masims of learning, factors affecting learning.
- 2 Will develop skills abilites to motivate the students.
- Unit III—Measurement and Evaluation.
- The student teachers :
- 1 Will be able to diseriminate the relative importance of these tools.

2. Will be able to select appropriate tool for measuring outcomes and to use it effectively.
3. Develop elementary skill and ability in processing data.
4. Will develop skills and abilities of preparing achievement tests and use them.

Unit IV—Key skills of teaching :

The student teacher :

1. Will develop abilities in making effective use of key skills of teaching.

Syllabus :

Unit I—Concept of teaching, learning, memorising instruction, training.

- (b) (i) Nature of objective of learning
- (ii) Specifications of objectives.

Unit II—Preparing yearly, Unit and daily lesson plans including home assignment plan.

Unit III—Instructional Strategies.

- (a) Significance, Identification and development of skills involved in teaching life.
 - (i) Introducing
 - (ii) Probing through questions
 - (iii) Lecturing
 - (iv) Discussing
 - (v) Demonstrating
 - (vi) Illustrating with examples
 - (vii) Explaining
 - (viii) Stimulus variation
 - (ix) Reinforcement
- (b) Planning lesson based on
 - (i) Problem solving
 - (ii) Project work
 - (iii) Supervised study
 - (iv) Team teaching
 - (v) Discovery approach.

Unit IV—Measurement & Evaluation :

1. (a) Concept of evaluation
- (b) Types of evaluation tools
- (c) Concept of objectivity and reliability.
2. Elementary Statistics :—Mean Mode, Mediam, Percentile, S.D. Rank Difference, Correlation Grafical, Presentation of data.

Unit V—Innovative Practices :

- (a) Micro Teaching
- (b) Programmed Learning
- (c) Team Teaching
- (d) Panel discussion
- (e) Field Trips
- (f) Conference
- (g) Work-shop

Practicum : Any one of the following :

1. Developing an yearly plan for the teaching of (may select a subject of his choice)
2. Observation of lessons to locate skills demonstrated in the lessons by a particular pupil teacher.
3. Analysing atleast five skills of teaching.
4. Planning a lesson based on : any method covered under Unit III (b).
5. Preparing items to test objectives of teaching.
6. Preparing a linear programme on any concept.

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4. Moons, R.R. : Methodology of Teaching.
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6. Carrett : Statistics in Psychology and Education.

Final Year B.Sc. (P/H) B.Ed., 1985 & 1986.

Paper I—Methods of Teaching Science :

Duration : 3 hours

Max. Marks 100

Internal : 20

External : 80

Unit I :—Objectives of Science Education :

- (a) The changing nature of science objectives, concept that objectives grow out of the nature and structure of science as a disciplining and out of nature of different cultures.
- (b) Types of objectives, Bloom's Taxonomy of Educational objectives and its relevance to various science subjects.

- (c) Knowledge, understanding, application & skills objectives as details by NCERT.

Unit II :—Science Curriculum Planning :

- (a) Concept of curriculum, its development and organization in science subjects.
 (b) Recent trends in curriculum development in India, U.K., U.S.A.

Unit III :—Learning Theories and Teaching of Science

Basic concepts underlying the learning theories : Reinforcement, operant conditions, insight, Productive Thinking. Piagetian Theory, and Accelerated Theory of learning.

Unit IV :—Methodology of Science Teaching

- (a) Lecture method.
 (b) Demonstration Method.
 (c) Problem solving method.
 (d) Project Method.
 (e) Historical Approach to Science Teaching.
 (f) Discovery Approach/Inquiry Approach to Science teaching.

Unit V :—Unit and lesson Planning in Science subjects.

- (a) Unit Planning :
 (b) Lesson Planning : Formulation of behavioural objectives, content analysis (concepts/major points theory, laws, etc. selection of learning experiences (demonstrations; activities evaluation of learning experience (types of questions and their characteristics).

Unit VI :—Instructional Material in Science :

- (a) Printed material : Text book (criteria, scope and limitation, supplementary reference books, periodical literature, reference material (encyclopedial, dictionary and specially prepared material), programmed material.
 (b) Films, film strips, epidiascope, projectors, chart, model) flannel board etc.
 (preparation of instructional material should be stressed)
 (c) Use of library, community resources, laboratory materials and audio visual media be stressed.
 (d) Selection, care and repairs of equipment, tools and materials for construction of improvised apparatus.

- (e) Use of out door resources as school garden aquarium, fish pond and industrial places be used extension of class room learning experiences.
- (f) Use of other resources for science teaching as extension lectures, field trips, radio broad-casts, T. V. broadcast etc.
- (g) Organization of science activities such as science clubs science fairs, science museum etc.

Unit VII :—Evaluation in Science Teaching.

- (a) Concepts of evaluation, relationship between evaluation. objectives and curriculum (learning experience).
- (b) Methodology of constructing unit test. characteristics of a good test.
- (c) Preparation and use of various types of test items, (objective (based items).

Unit VIII :—Internship.

The concept of internship should precede the internship experiences provided to student teachers.

Observations in the class room, review of purposes of internship, illustration of activities to be used including the community surveys.

Periodically the gain in experiences by the student teachers may be reviewed through seminar or discussion methods.

Practicum :

- (a) Preparation of one unit and one lesson plan in each teaching subjects.
 - (b) Planning of science laboratories in science subjects.
 - (c) Preparation of one teaching aid in each teaching subjects.
 - (d) Formulation and use of objective based questions to test the understanding of content of one unit plan, interpretation of data and application of principles.
 - (e) Formulation of Hypothesis and testing of Hypothesis from selected content of science subjects.
-

MINUTES OF THE MEETING OF THE ADHOC COMMITTEE
OF COURSES IN SHEEP & WOOL HELD ON 1-12-83 AT
12.03 NOON IN THE VICE-CHANCELLOR'S SECRE-
TARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Prof. A. L. Choudhary (*Convener*)
2. Dr. M. V. Sapre
3. Prof. A. S. Kapoor

1. The Committee scrutinised the statements and qualifications and teaching experience etc. of teachers put at by the office and revised the panel of examiners in question as per Appendix I.

2. The Committee recommended no change in the existing scheme of examination and courses of study for (i) Ist Yr. T.D C. (Pass course) Examination of 1985, (ii) II Year T.D C. (Pass course) Examination of 1986 and (iii) Final Year T.D.C. (Pass course) Examination of 1986 especially in view of the fact that the present scheme and courses are yet to be tested for all three classes.

3. The reports of examiners were not put up before the Committee. Hence the Committee was not in a position to offer any comments on the same.

4. Dr. M. V. Sapre has agreed to get the Hindi translations of the Syllabi made at standard rates. It is recommended that to get the work expedited a honorarium of Rs. 100/- per paper be paid. Dr. Sapre will circulate the Hindi translations of the papers to the Committee members who after going through there will signify their acceptance to the Convener.

5. The Convener observed that at the time of instituting this course it was a pre-condition that the prescribed physical facilities in terms of Laboratory, live stock and staff will be created within the first year. Further, it was also opined that before gran-

ting affiliation in the second year a sub-committee will visit the institution and submit their report regarding compliance of the above conditions. The Committee strongly feels that since the programme is already in 3rd Year a Committee consisting of Dr. A. S. Kapoor and Dr. M. V. Sapre may visit and submit their report on the above facts.

The meeting ended with a vote of thanks to the chair.

(A. L. Choudhary)
Convener

List of experts in Sheep & Wool

1. Dr. B.S. Malik, Ph D. (Sheep Breed) M.V.Sc. (Sheep Husb.) Fatehpur (Sikar).
2. Dr. M. V. Sapre, Principal. Sheep and Wool Training Institute Tonk Road, Jaipur B V. Sc. (Wool Tech)
3. Shri S D.O. Bohra, Scientist Incharge Technical, Central Sheep and Wool Research Institute, Avikanagar (Malpura) Distt. Tonk, Pincode No. 304501. Ph.D. (Sheep Breeding)
4. Dr. Balbir Singh. Research Scientist, Deptt. of Animal Breeding, College of Animal Science, Haryana Agriculture University, Hissar (Sheep Husb.)
5. Dr. Shri Ram Choudhary, Research Scientist, Deptt. of Animal Breeding, College of Animal Science, Haryana Agriculture University, Hissar (Sheep Husb.).
6. Dr. Balbir Singh, Ph. D. College of Veterinary and Animal Science, Bikaner (Animal Husb.)
7. Dr. H. K. Gupta, A.D R. Office, A.E.S. (Animal Husb.) Sciences, Bikaner.
8. Dr. B. R. Choudhary Associate Professor, College of Veterinary and Animal Science, Bikaner (Sheep Husb.)
9. Dr. S.C. Mehra, Sheep & Wool Training Institute Jaipur.
10. Dr. D. B. Kalra S III. CSRI (Sheep Husb.) Avikanagar.
11. Dr. A. K. Gahlot Lect., Addl. Div. Res. (Sheep. Husb.) A.E.S. Durgapura.
12. Dr. R.M L. Lakhotia, Associate Prof. (Sheep Health) C.V.A.S., Bikaner.
13. Dr. B. C. Patnaik, S III, CSRI (Sheep Husb.) Bikaner.
14. Dr. B. K. Behiwal, Asstt. Prof. AB (Sheep Breeding) C.V.A.S., Bikaner.
15. Dr. S. C. Sharma, S. III CSRI (Shop) Ext.
(Avikanagar)

दिनांक १०-१२-८३ को हिन्दी पाठ्यक्रम मण्डल की बैठक विश्वविद्यालय सैनिट भवन में सम्पन्न हुई ।

उपस्थिति

- डा० राजेन्द्र प्रसाद जर्मा
- डा० देवी प्रसाद गुप्त
- श्री कान्ति चन्द्र गौतम
- डा० होती लाल भारद्वाज
- डा० रामगोपाल जर्मा, (दिनेश)
- डा० कन्हैयालाल जर्मा

पाठ्य मण्डल ने निम्नांकित प्रस्ताव सर्वसम्मति से पारित किए :-

१. एम०ए० के द्वितीय प्रश्नपत्र (आधुनिक काव्य) की पाठ्यपुस्तक काव्यांगिनी के निम्नलिखित कवि छोड़ कर पढ़ाए जायें :-

“दिनेश”, “वञ्चन”, “जिवमंगलसिंह” “सुमन”, नागार्जुन,
गिरिजाकुमार माथुर ।

२. कुटुम्ब में सर्ग संख्या २,३,४ तथा ६ पढ़ाए जायें ।

३. प्रश्नपत्र ५ (१) का नामकरण साहित्यालोचन किया जाये ।

४. दिनांक ३० अगस्त, १९८३ की कला संकाय की संस्तुति के अनुमोदनार्थ निम्नांकित पुस्तक संस्तुत की जाती है :-

प्रथम वर्ष कला (वैकल्पिक हिन्दी) “काव्य प्रभा” पुस्तक के स्थान पर काव्य-सुधा (सं० डॉ० नरेन्द्र भानावप श्याम प्रकाशन जयपुर मूल्य ६ रुपये) ।

५. सर्वसम्मति से यह प्रस्ताव पारित किया गया कि डॉ० रामगोपाल जर्मा “दिनेश” के हिन्दी पाठ्यक्रम मण्डल का सदस्य निर्वाचित होने के कारण उनके द्वारा (एम०ए० के प्रथम प्रश्नपत्र में) सम्पादित पुस्तक “कथा श्री” के स्थान पर “आधुनिक कहानियाँ” संकलन सं० डॉ० भगवत स्वरूप मिश्र, प्रकाशक विनोद पुस्तक मंदिर, आगरा मूल्य १२/-। निम्नांकित चार

कहानियों को छोड़कर, आकाशवाणी (अश्वक) परिन्दे (निर्मलवर्मा)
 भोलाराम का जीव (हरि शंकर परसाई) तथा यही सच है (मन्नू भंडारी)
 १९८५ की परीक्षा के लिए लगादी जाये । तथा भविष्य में स्वमिशन मांग
 लिया जाये।

वैठक की कार्यवाही संयोजक को धन्यवाद ज्ञापन के साथ समाप्त हुई ।

ह०।-

राजेन्द्र प्रसाद शर्मा
 संयोजक

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN POLITICAL SCIENCE HELD ON
16/17-9-83 AT 12.00 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT, UNIVER-
SITY CAMPUS, JAIPUR.

Present :

1. Prof. V.R. Mehta (Convener)
2. Prof. A.B. Mathur
3. Dr. V.K. Arora
4. Shri S.R. Jain
5. Shri P.K. Chaddha
6. Shri J.N.S. Punia
7. Dr. M.P. Roy

1. The Board appointed Professor V.R. Mehta Head, Univ. Deptt. of Political Science, Jaipur as Convenor, B.O.S. in Pol. Science under Section 24E(8) of the University Act for a fresh term of three years.

2. Under clause IV of Sub-sec. 34 of the University Act, Shri P.K. Chaddha was elected as a member other than the Convener of the Board of Studies to serve on the committee for selection of examiners, in the subject for the year 1983-84.

3. (i) In the absence of any official list, the Board scrutinised the statement of qualifications and teaching experience of teachers prepared by Shri P.K. Chaddha and approved it with some additions and alterations.

(ii) The Board requested the Registrar's office to obtain the old list from Dr. P.D. Sharma in respect of teachers in the colleges as early as possible.

(iii) The Board also appointed the following committee to prepare an exhaustive panel of examiners :

1. Prof. V.R. Mehta
2. Shri S.R. Jain

3. Dr. V.K. Arora

4. Shri P.K. Arora

4. The Board noted the reports of Examiners for various examinations in 1982.

5. 1. The Board recommended the courses of study and the text-books in the subject for the following examinations together with relevant additions and/or alterations to the ordinances and regulations :

(a) Under-graduate Courses Exam. 1985 item postponed.

(b) The Board resolved to entrust the following teachers the task of revision of papers mentioned against their names : For Post-graduate Exams.

(i) Dr. V.K. Arora —Paper III

(ii) Shri J.N.S. Punia —Papers II & IV.

(iii) Dr. A.B. Mathur —Papers pertaining to Western Political Thought.

(iv) Shri P.K. Chaddha —Paper VI

(v) Prof. V.R. Mehta —Indian Social & Political Thought.

(vi) Dr. M.P. Roy —Public International Law and Diplomacy.

(vii) Prof. Ramesh Arora —Local Government & Abroad—Group C (iii).

(viii) Shri P.C. Mathur —Group C(iv), Distt. Administration in India.

(ix) Dr. S.L. Verma —Group c (v), Social Change and Administration of Law.

(x) Dr. K.L. Kama —Group E (V) : State Politics in India.

(xi) (see below)

- (e) In the meanwhile the following additions/alterations may be introduced :

Paper IX (I), delete (i), viz., "an additional paper from any of the optional groups" and add instead "Indian Social and Political Thought."

(II) Group (B), *International Politics* :

Add. (vii) Government and Politics

(vix) Government and Politics of Canada—syllabus to be prepared by the Department and presented in the next meeting of BOS.

(ix) International Organization Courses for the year 1981-82 to be continued.

In view of the importance of the course, the Board further *resolved that* the Vice-Chancellor be requested that this be re-introduced for 1984 Exam.

(xi) Dr. (Mrs.) S.K. Asopa—Group B (iv) : Government and Politics of West Asia.

(III) Group(C)(ii) *Comparative Public Administration.*

Add the following book,

Dr. Ramesh Arora—Comparative Public Administration.

Group (E) (iv) State Politics in India 4th line, add "with special reference to Rajasthan".

M. Phil. Exam. 1986

Paper I—Marks selection Mac Millan delete Weber.

6. The Board *resolved to* entrust the work of translation of syllabus to Shri P.C. Shastri and Dr. M.S. Chaturvedi under the supervision of Dr. M.P. Roy and Dr. V.K. Arora.

7. The Board postponed consideration on the letters No. F 3-29/80 (CP) dated 10-2-82 from U.G.C.N. Delhi.

8. The Board postponed consideration on the letter No. F 4-19/82 (ER) dated 10 1-1983 received from the Chairman, U.G.C. Delhi.

9. The Board postponed consideration of letter No. F 3/82/ (CP) dated 28 July, 1982 from Secretary U.G.C.N. Delhi.

The meeting ended with a vote of thanks to the Chair.

Sd/-
V.R. Mehta
(Convener)

MINUTES THE MEETING OF THE BOARD OF STUDIES
IN ENGLISH HELD ON 1ST AND 2ND OCTOBER, 1983
AT 12.00 NOON AND 9.00 A.M. RESPECTIVELY IN
THE VICE CHANCELLOR'S SECRETARIAT
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri D.N. Mathur
2. Shri D.C. Bhanawat
3. Shri B.P. Singh
4. Dr. R.C. Seth
5. Shri R.A. Joshi
6. Dr. R.K. Kaul (Dean)
7. Shri S.B.L. Rawat (Convener)

N.B. : 1. Dr. Kaul attended the meeting on 1st October.

2. Dr. J.N. Sharma could not attend the meeting.

1. Under Sub-Section (8) of Section 24 E of the University Act, the Board elected Shri S.B.L. Rawat, Head of the Deptt. of English, Dungar College, Bikaner, Convener.

2. Under Section 34 (4) (iv) of the University Act, the Board elected Shri R.A. Joshi, Head of the Deptt. of English, S.K. College, Sikar as a member other than the Convener to serve on the committee for selection of Examiners in the subject for the year.

3. The Board scrutinized the statement of qualifications and teaching experience of teachers received from the University teaching department, University College, affiliated Colleges and other Universities for inclusion in the revised panel of examiners and revised the panel in terms of S(25) 2(a).

4. The Board went through the reports of examiners and question paper set for the Post-graduate examinations of 1983 and found that a number of them were sketchy and carelessly written.

5. The Board recommended the courses of study and text books in the subject for the various examinations with the relevant additions and/or alternations to the Regulations and ordinances as under :—

- (i) The Convener informed that the proposal to have a text book for first year General English prepared by a committee for the Examination of 1985 in place of Language through Literature Part II, was dropped by the Faculty. The Board *resolved to recommend* that “A Cavalcade of Modern English Prose” by Bhatnagar R.P. be prescribed for the first year T.D.C. Examinations of 1985 and 1986. This proposal was made by D.N. Mathur and supported by Servashri R.C. Seth, D.C. Bhanawat and R.A. Joshi where as Shri B.P. Singh wished that his note of dissent be recorded (Shri B.P. Singh said that he could not support the motion as he could not go through the book which was not received by him).
- (ii) Dr. R.K. Kaul suggested that courses of study for the post-graduate and undergraduate classes (pass course and Honours courses) should be revised after due consideration. He suggested that two committees (one for the Honours Course and the other for the undergraduate Pass course and the post-graduate course) should be formed so as to look into the matter and suggest changes/additions alterations. Accordingly, a committee for the revision of Honours Course was formed as under :
1. Shri D.N. Mathur (Convener)
 2. Miss R.R. Saxena (Maharani's College, Jaipur)
 3. Miss Deepali Chandra (Kanoria College, Jaipur)
 4. Sister Elise (Sophia College, Ajmer).

Another committee was formed for the Degree Course and the Post-graduate courses as under :

1. Shri S.B.L. Rawat (Convener)
2. Shri D.N. Mathur
3. Jasbir Jain (Jaipur)

4. Shri R.P. Bhatnagar
5. Shri D.C. Bhanawat
6. Shri R.C. Seth
7. Shri R.A. Joshi (Sikar)

It was decided to hold a meeting of these committees well before the next meeting of the Board so that their recommendations may be considered at that time.

It was, however, decided in view of Sister Elise's letter (Sophia College, Ajmer) Appendix I that papers for B.A. (Hon.) Part II Examination 1984, be named as social History, and Literary movements from Renaissance to Modern Time be deleted from the nomenclature. Questions are to be set from the book English Social History by G.M. Trevalyan alone.

6. The Board considered a letter from Dr. Kaul (Appendix II) to the Dy. Registrar regarding Shakti Singh Mathur's (Head of the English Deptt. Govt., College, Kota) letter to him. It was resolved that in future paper-setters be requested to incorporate instructions to examinees in the papers that they are expected to write essay type questions and that they should not arrange them under sub-headings.

The meeting ended with a vote of thanks to the Chair.

Sd/-
S.B.L. Rawat
Convener

APPENDIX-I

Sophia Girls College
AJMER

Date : 13th Sept., 1983.

No. F—6/83-84/498.

To,

D.N. Mathur,
Member of the Board of
Studies in English,
University of Rajasthan,
JAIPUR.

Sir,

This is with reference to the IV paper of B.A. Hons. English (Part I). It consists of Social History of English and the four literary movements. From our personal experience in the class room, we feel that it would be more relevant if this paper could be deleted from the course and substituted with a paper that contains Essays ranging from the 18th to 20th centuries, the details of which we discussed with you.

We would be grateful if you consider this suggestion and implement the change for the 1985 examination.

Thanking you,

Yours sincerely,
Sd/-
(Sister Elise)
Principal
Sophia Girls College,
Ajmer.

APPENDIX-II

Head

Department of English

Sept. 30, 1983

Urgent

The Dy Registrar (Acad)
University of Rajasthan
Jaipur.

Dear Sir,

Mr. S.S. Mathur, Head of the English Deptt., Govt. College Kota has raised a very important matter which should be placed before the Board of Studies at its meeting tomorrow.

He wants a ruling on whether answers to questions in the M.A. (English) examination should be arranged essay wise or under sub-headings, with each sub-heading underlined.

Also he would like to know whether the critics whose opinions are used should be mentioned by name

I should like the Convener with the approval of the Board to circulate to every paper-setter (through the University) the following rulings :

1. In the discipline of English literature we encourage the essay type of answer.

2. The candidates should not only name the critic/authority but also use quotation marks so that the answer does not give the impression of being plagiarized.

Thanking you,

Yours faithfully,
Sd/-
(R.K. Kaul)
Professor & Head

दिनांक १६-१७-मिस्वर, ८३ को मध्याह्न १२ वजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न हिन्दी पाठ्यक्रम मंडल की बैठक का विवरण ।

उपस्थिति

डा० गजेन्द्र प्रसाद शर्मा
डा० विश्वम्भर नाथ (उपाध्यक्ष)
डा० देवी प्रसाद गुप्त
श्री कातिचन्द्र गौनम
डा० होतीलाल भारद्वाज
डा० रामगोपाल शर्मा, "दिनेश"
डा० कन्हैयालाल शर्मा

१. विश्वविद्यालय अधिनियम के प्रावधान सं० २४ ई० (८) के अन्तर्गत प्रोफेसर राजेन्द्र प्रसाद शर्मा सर्वसम्मति से हिन्दी पाठ्यक्रम मंडल के संयोजक चुने गए ।

२. विश्वविद्यालय अधिनियम के प्रावधान सं० ३४ के अन्तर्गत श्री कांति चन्द्र गौनम सर्वसम्मति से सत्र ८३-८४ के लिए परीक्षा समिति के सदस्य चुने गए ।

३. परीक्षा सूची स्वीकृति की गई ।

४. ए—प्रस्तुत किए परीक्षक प्रतिवेदनों पर विचार विमर्श हुआ और एम०ए० (८) के नवम प्रश्नपत्र का माडल बनाकर प्रश्नपत्र चयनकर्ता को भेजा जायगा । यह निश्चय किया गया कि माडल पेपर परीक्षा समिति के सदस्य बनाएं ।

बी—प्रस्तावित किया गया कि पांचवा प्रश्नपत्र केवल साहित्यालोचन का रखा जाय और नवम् प्रश्नपत्र—“हिन्दी साहित्य का इतिहास” पर रखा जाय । इस पुनवर्गीकरण के लिए पाठ्यक्रम मंडल को अगली बैठक निकट भविष्य में बुलाई जाय ।

५. यू०जी०सी० के परिपत्र के परिप्रेष्य में प्रथम वर्ष-तृतीय वर्ष के पाठ्यक्रम का निर्धारण इस प्रकार किया गया :-

प्रथम वर्ष सामान्य हिन्दी :

१. प्रथम वर्ष सामान्य हिन्दी-इसमें वे ही पुस्तकें संस्तुत की जायेंगी जो कि विशेष मवमिशन के आधारे पर पाठ्यक्रम अध्ययन मंडल संस्तुत करेगा ।

प्रथम वर्ष वैकल्पिक हिन्दी :

कवीर, तुलसी, मूर, मीरां, पद्ममाकर, मैथिलीशरण गुप्त तथा सुमित्रा नंदन पंत की रचनाओं (सरस-सुबोध एवं प्रतिनिधि) का एक संग्रह । हिन्दी साहित्य के इतिहास तथा काव्यशास्त्रीय भाग यथावत ।

द्वितीय वर्ष कला :

१. प्रथम प्रश्न पत्र-चंदवरदाई, जायसी, केशव, विहारी, धनानंद, देव, मतिराम की प्रतिनिधि रचनाओं का काव्य संग्रह ।
२. काव्य ढोप, काव्य गुण तथा शब्द शक्तियां ।

तृतीय वर्ष कला :

१. प्रथम प्रश्न-पत्र हरिश्चंद्र, प्रसाद, निराला, महादेवी वर्मा, दिनकर नागार्जुन, अज्ञेय की कविताओं का संग्रह ।
२. रस की परिभाषा, अवयव एवं प्रकार ।

द्वितीय वर्ष :

१. द्वितीय प्रश्नपत्र-(१) कहानी संग्रह-प्रेमचन्द, प्रसाद, जैनेन्द्र, रेणु, रांगेयराघव, यज्ञपान, अमृतलाल नागर और अशक की कहानियां ।
२. एक उपन्यास ।

तृतीय वर्ष-द्वितीय प्रश्न पत्र :

१. एक निबंध संग्रह-बालकृष्ण भट्ट, रामचन्द्र शुक्ल, महावीर प्रसाद द्विवेदी, हजारी प्रसाद द्विवेदी, रामविलास शर्मा, प्रेमचन्द, कुबेर नाथ राय, डॉ० नगेन्द्र, नंददुलारे बाजपेयी, रामकृष्ण शिलोमुख, महादेवी वर्मा, हरिजनकर परनाई के निबंध ।
२. एक खंड काव्य-राष्ट्र चेतना या सांस्कृतिक चेतना अध्ययन उपर्युक्त सभी पुस्तकों का मवमिशन मांगा जाये ।

६. प्रस्तावित किया गया कि फैकल्टी के सर्वसम्मत निर्णय को दृष्टि में रखते हुए प्रथम वर्ष वैकल्पिक हिन्दी तथा तृतीय वर्ष वैकल्पिक हिन्दी के काव्य-संग्रहों को तत्काल प्रभाव से बदलने के लिए १० दिसम्बर के आमपान पाठ्यक्रम मंडल की बैठक बुलाई जाय। इस बैठक में विश्वविद्यालय के नियमानुसार एक दिसम्बर ८३ तक प्राण पाठ्यपुस्तकों मंडल के विचारार्थ प्रस्तुत की जाय।

७. फैकल्टी के सर्वसम्मत निर्णयानुसार प्रथम वर्ष मानान्य हिन्दी को पाठ्यपुस्तकों का सवमिशन जीव्वातिजीव्वा मांगा जाय।

८. बी०ए० आर्त्स के पाठ्यक्रम यथावत।

९. एम०ए० डिप्लोमा कोर्स के पाठ्यक्रम लयावत।

१०. एम०ए० प्रथम प्रश्न-पत्र :

१. कहानी संग्रह का सवमिशन तुरन्त मांगा जाय, क्योंकि डॉ० दिनेश पाठ्यक्रम मंडल के सदस्य हो गए हैं, अतः क्या श्री, कहानी संग्रह तुरन्त प्रभाव से हटा दिया जाय।

२. एंकाकी संग्रह का सवमिशन पूर्ववत् मांगा जाय।

३. लहरों के राजहंस के स्थान पर नाटक का सवमिशन मांगा जाय।

४. गेय पुस्तकें यथावत।

५. सहायक पुस्तकों में स्वातन्त्र्योत्तर हिन्दी कहानी में मानव प्रतिमाने० डॉ० हेतु भारद्वाज जोड़ी जाय।

द्वितीय प्रश्न पत्र :

१. "मुवर्गा" प्रबंध काव्य तुरन्त हटा दिया जाय और नए प्रबंध काव्य का सवमिशन मांगा जाय।

२. "प्रमाद, पंत, निराला, महादेवी को श्रेष्ठ रचनाएँ, संकलन में मे प्रमाद को छोड़कर गेय पढ़ाया जाय।

तृतीय प्रश्न-पत्र :

१. मीरा मुक्तावली के स्थान पर डॉ० जम्भूसिंह मनोहर द्वारा संपादित मीरा पदावली" लगायी जाय।

२. "भ्रमरगोतसार" के स्थान पर सूर-मुखा" सं० डॉ० हरवंश लाल शर्मा (जैन पुस्तक सदन, ग्वालियर) लगाया जाय।

- ३ मीरा: जीवन और काव्य ले० डॉ० रामगोपाल दिनेश सहायक पुस्तकों में जोड़ी जाय ।

चतुर्थ प्रश्न-पत्र :

१. जायसी ग्रन्थावली (सं० माता प्रसाद गुप्त) के स्थान पर आचार्य रामचन्द्र शुक्ल द्वारा संपादित "जायसी ग्रंथावली" लगायी जाय ।
२. कवीर वाणी (सं० डॉ० सरनामसिंह) हटा दी जाय और कवीरवाणी (सं० डॉ० भागीरथ मिश्र) कमल प्रकाशन, इंदौर लगायी जाय ।

पंचम प्रश्न-पत्र :

१. वर्ड्सवर्थ और रिचर्ड्स के काव्य मिश्रित हटाकर भावसंवाद और अस्तित्ववाद जोड़ दिया जाय ।
२. सहायक पुस्तकों में क्रम संख्या ४,५ हटा दी जाय ।
३. सहायक पुस्तकों में साहित्य : मिश्रान्त और समालोचना, ले० डॉ० देवीप्रसाद गुप्त प्रकाशन आत्माराम एण्ड संस जोड़ी जाय ।

षष्ठ प्रश्न-पत्र :

१. यथावत् ।
२. हिन्दी भाषा और उसका इतिहास ले० डॉ० रामगोपाल दिनेश सहायक पुस्तकों में जोड़ी जाय ।

सप्तम प्रश्न-पत्र—नाटक :

१. दिव्या उपन्यास के स्थान पर नरेज मेहता कृत यह पथ बंधु था उपन्यास लगाया जाय ।
२. "वृंद और समुद्र" के स्थान पर खंजन नयन लगाया जाय ।
३. "अपने-अपने अजनबी" के स्थान पर "मैला आचल" लगाया जाय ।

सप्तम प्रश्न-पत्र—अपभ्रंश :

१. सहायक पुस्तकों में अपभ्रंश भाषा और व्याकरण ले० डॉ० राम गोपाल शर्मा दिनेश (प्रकाशक-हिन्दी ग्रंथ अकादमी) जयपुर, जोड़ा जाय ।

सप्तम प्रश्न-पत्र—लोक साहित्य :

१. सहायक पुस्तकों में हाड़ोती बोली और साहित्य ले० डॉ० के० एल० शर्मा जोड़ा जाय ।

अष्टम प्रश्न-पत्र—निबंध :

निम्नलिखित सहायक पुस्तकें जोड़ी जायें :-

१. साहित्यिक निबंध—डॉ० देवीशरण रस्तोगी-राजहंस प्रकाशन मेरठ ।
२. साहित्यिक निबंध—डॉ० गणपति चन्द्र गुप्त ।
३. साहित्यिक निबंध—डॉ० शान्तिस्वरूप गुप्त ।

ह०/-

राजेन्द्र प्रसाद शर्मा
संयोजक

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN GEOLOGY HELD ON 14TH AND 15TH NOVEMBER,
1983 AT 12 00 NOON IN THE VICE-CHANCELLOR'S
SECRETARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. M.K. Pandya (*Chairman*)
2. Shri N.C. Jain
3. Dr. N.M. Khandelwal
4. Prof. Dr. T.V.V.G R.K. Murty (*External Member*)

N.B. :—Prof. M.W. Chaudhari, Dr. B.L. Sharma and Prof. S.K. Agrawal could not attend the meeting.

The Board appointed Dr. M.K. Pandya as Chairman since Prof. M.W. Choudhary, convener of the Board was not Present.

1. Under clause (iv) of sub-section (4) of Section 34 of the University Act, the Board elected Shri N.C. Jain, Associate Professor, Maharaja's College, Jaipur as a member other than the convener of the Board of Studies to serve on the Committee for Selection of examiners in the subject for the year.
2. No applications of teachers for inclusion of their names in the panel of examiners were received for scrutiny. As no pre-existing panel of examiners was provided in the meeting, revised Panel of examiners could not be prepared.
3. The Board discussed the reports of examiners and question papers set for the examinations of 1980-1983 which were made available. The board did not offer any comments in this regard as hardly 3 reports were available.
4. The Board recommended the courses of study and text books in the subjects for the following examinations together with the relevant additions and/or alterations to the Ordinances and Regulations. The Syllabai of all the 3 years of T.D.C. was recast

in light of COSIP-ULP Syllabai as per suggestions made by the subject teacher Committes at its meeting held on 26th Aug., 1983.

I. Degree Examinations :

- (a) First Year T.D.C. Examination (Pass Course) 1986
as per Appendix—I
- (b) Second Year T.D.C. Examination, 1986 (Pass Course)
as per Appendix—II
- (c) Third Year T.D.C. Examination (Pass Course) 1986
as per Appendix—III
- (d) Well defined field work for all the 3 years Degree classes was recommended. After little modification has been incorporated alongwith the practicals in Appendices I, II and III.

As per Academic Council and Syndicate vide its Resolution No. 26, dated 24/25th May, 1983 the IInd Year Examination of the Three Year Degree Course has been dispensed with, however, the Courses have been framed (Appendix-II), for home examination. The question paper for home examination have to be supplied by the University as per Syndicate decision at its meeting held on 3rd and 4th June, 1983.

II. Honours Examinations : Two Year Scheme.

Part I Examination, 1986—See Appendix—IV.

Part II Examination, 1986—See Appendix—V.

III. Post-Graduate Examination.

M.Sc. Prev. (Annual Ex.) of 1986-No Change.

M Sc. Final (Annual Ex.) of 1987-No Change.

M.Sc. (Technology) Applied Geology Examination of 1986 (Modified Syllabus given in Appendix—VI).

IV. M Sc. (Tech.) Applied Geology Examination of 1986.

The external member of the Board was of the opinion that it would be too such a load on the candidate if they are to do 4 theory papers and a thesis. Hence the thesis of 100 marks be dropped and only theory papers be continued. He was also of the opinion that 50 days field work should

be adequate at M.Sc. (Tech.) level. In view of discussions made in the meeting it was unanimously resolved that the syllabus for M.Sc. (Tech.) Applied Geology Examination for the year 1985 be adopted as given in Appendix—VI. The syllabus of practical training programme and the distribution of marks for Practicals were recasted in light of recommendations of the informal meeting of the subject teachers in Geology held in the V.C. Secretariat, Jaipur held on 26th Aug., 1983 and the discussions and recommendations made in the subsequent meeting under the chairmanship of Prof. M.W. Choudhary, Convener, B.O.S. in Geology alongwith other teachers of the Post-Graduate of Geology, Udaipur (recasted syllabus of papers, Practical training programme and distribution of Practical marks etc. was made available in the B.O.S. Meeting).

5. As no meeting of the sub-committee consisting of Dr. M.K. Pandya, Dr. B.L. Sharma & Shri N.C. Jain was convened by the University since Jan. 8th, 1983 as per the recommendations of B.O.S. meeting on 8th January, the translation work of Syllabi in Hindi could not be finalised. It was then decided that translation work takes sufficient time as the terminology given by Central Hindi Directorate is to be utilised and constant discussion is necessary. It was resolved that a meeting of following members be convened by the University sometimes in Summer Vacation for 3-4 days to finalise the manuscript.

Dr. M.K. Pandya	}	Post graduate Department of Geology, Rajasthan University, Udaipur.
Dr. B.L. Sharma		

Shri N.C. Jain (Maharaja's College Jaipur.)

Dr. N.M. Khandelwal (Govt. Bangur College, Didwana)

6. The Board considered a letter No. F. (3) 82 CP dated 28th July, 1982 from the Secretary, University Grants Commission suggesting guide-lines for restructuring the courses of study at the under-graduate level and the introduction of Courses in actuarial science/insurance. The main theme of the letter was to introduce job-oriented and professional courses in the University, and the suggestions were made towards the modernisation of courses,

introduction of New Pattern of Courses and improvement of the quality of education etc. It was also stressed that more courses of Applied nature in the form of Diploma Courses be introduced. As the Courses in Geology are already Job-oriented, however, there is vast scope in the introduction of Diploma Courses in Surveying, Instrumentation Techniques in Geology etc. and a great need of introducing M.Sc. Courses in Geophysics or Geophysical exploration was fact. As per suggestions given in the letter New Courses in Fossil Fuel and energy resources Ground water technology and water management, Geotechnics and mining etc. be introduced in the University. It was resolved that a separate meeting of B.O.S. in Geology be called for 2 days to work out the draft proposal for onward transmission to U.G.C. for financial considerations etc. The information of this meeting be given quite in advance so that proposal in the form of draft syllabi be prepared by the various members so that they be discussed in the meeting.

The meeting ended with a vote of thanks to the Chair.

Enclousers,
Appendix-I-VI.

M.K. Pandya
(Chairman)

Note :

Text Books, Reference Books and Scheme of marking of Theory and Practicals would remain the same as in the syllabus given below except the nomenclature of paper which has been modified the syllabus of various papers and nomenclature is being given in Appendix I, II & III for T.D.C. Courses in Geology.

APPENDIX—I

First Year T.D.C. (Pass) Course Examination 1986.

Scheme :

Min. Marks 36

Max. Marks 100

Paper I. General Geology

Duration 3 Hours.

Marks 50

Paper II. Crystallography & Mineralogy

Duration 3 hours

Marks 50

Paper—I—General Geology :

Definition, scope and subdivisions of Geology and their relation with other fundamental Sciences. The earth as a Planet-solar system and its members—relation of earth with other members

Shape, size, origin of the Earth—review of the different theories. Internal structure, constitution and composition of the earth. Nature and constitution of the Earth's crust and its movements. Age of the earth—different methods.

Volcanoes—Types and causes of volcanism—Products of volcanic action and distribution.

Earthquakes—causes and classification—effects—Seismic belts—seismograph and seismogram—their relation to volcanic activity, crustal deformation; Earthquake waves and their significance in study of the interior of the Earth.

Isostasy—continental drift, Elementary ideas about the concept of sea floor spreading and plate tectonics.

Origin and distribution of continents and oceans, Geosynclines and mountain ranges and their origin Geological work of river, glacier, wind, sea and ground water.

TEXT BOOKS

General Geology :

1. Sockt. W.B. : Antroduction to Geology Vol. I Macmillan.
2. Homes A. : Physical Geology, Thomas Nalson Sons London.
3. Spencer : Basic concepts of Physical Geology.
4. Datta, A.K. : Physical Geology; S. K. Bose 38. Hazari Bagh Road, Ranchi.

Reference Books :

1. Longwell Knoff and Flint oulines of Physical Geology, John Wiley and Sons.

Paper II—Crystallography and Minerology

Crystallography :—

Definition of a crystal—Amorphous and Crystalline state. Laws of Crystallography, Elements of Crystal Symmetry, Co-ordinate system in Crystallography. Morphology of crystals-faces-edges and solid angles-interfacial angles—use of contact goniometers—Forms.

Lattice—Crystal structure unit cell-Millers and Weiss indices/symbol of notation-zones and zones symbols Classification of Crystal systems.

Study of the following crystal classes :

Cubic or Isometric System :

Galena type or hexaoctahedral class

Pyrite type or diploidal class;

Tetrahedrite type or hexatetrahedral class.

Tetragonal system :

Zircon or ditetragonal-bipyramidal class.

Hexagonal system :

(a) Beryl type or dihexagonal-bipyramidal class;

(b) Calcite type or ditrigonal-scalenohedral class;

(c) Tourmaline type or ditrigonal-pyramidal (hemimorphic) class;

(d) Quartz type or trigonal trapezohedral class.

Orthorhombic system : Baryte type or bipyramidal class

Monoclinic system-Gypsum type or prismatic class.

Triclinic system-Axinite type or pinacoidal class.

Twinning in crystals—Laws of twinning, important types of twinning.

MINERALOGY

Construction and use of Petrological microscope. Elements of optical mineralogy a Double refraction, Becke line, interference colors. Pleochroism, extinction angle, Nicol Prism, Quartz wedge, and Gypsum plate, their construction and uses in determinative optical mineralogy Isotropic, uniaxial and biaxial crystals; indicatrix. Elements of crystal chemistry, ionic radii, Polymorphism. Pseudomorphism. Elements of bonding in crystals, Isomorphism. Physical properties of minerals and their determination, use of Moh's scale of hardness, Walker's steel yard and Jolly's spring balance.

Classification of Silicates.

Description of following rock forming mineral-groups,

Quartz, Felspar, Felspathoid, Pyroxene, Amphibole, Mica, Garnet, and Zeolite.

Study of the following minerals and their variations—Olivine, Epidote, Scapolite, Beryl, Apatite, Cordierite, Staurolite, Tourmaline, Topaz, Zircon, Sphene, Chlorite, Serpentine, Anjalusite, Kyanite, Silliminite, Talc, Kaolin, Fluorite, Magnetite and Rutile.

Crystallography and Mineralogy :

1. Read, H.H., Rutley's Elements of Mineralogy, Thomas Muny and Co. London.
2. Mason, Berry, Mineralogy; Asia publication.

Reference Books :

1. Ford, W.E. Dana's Text book of mineralogy, John Willay and Sons, New York.
2. Sharma, N. L. Determinative tables.

Practicals

Ist Year (Pass Course), 1983.

GENERAL GEOLOGY

Study of typical land forms depicted through topographical maps.

Study of Geomorphology models depicting different geomorphic features.

Drawing showing the cross section of a typical volcano.

CRYSTALLOGRAPHY AND MINERALOGY**Crystallography :**

Determination of symmetry in crystal models and measurement of interfacial angles with contact goniometer.

Drawing of crystals of cubic system by Clinographic Projection.

The study of the symmetry, forms and combination of forms in crystals given below :—

Cubic system—Galena, Fluorite, Magnetite and garnet. Pyrite, Tetrahedrite, system.

Tetragonal-System—Zircon, Rutila, Cassiterite,

Hexagonal system—Beryl, calcite, Tourmaline, Quartz.

Orthorhombic system—Barite, Olivine, Staurolite, Sulphur.

Monoclinic system—Gypsum, Orthoclase, Augite, Hornblende, Epidote.

Triclinic system—Axinite, Albite.

Study of simple twinning crystals.

MINERALOGY

Determination of specific gravity of atleast six samples of mineral by Walkers steel yard balance.

Study of Hardness, Lusture, Fracture, Cleavage, and Streak, of minerals.

Study of the Physical properties and diagnostic features of the following minerals :—

Opal, hematite, magnetite,

halite, calcite, fluorite, tourmaline, magnesite,

orthoclase, microcline, plagioclase, hypersthene,

Augite, tourmaline, tremolite hornblende, asbestos,

beryl, napheline, sodalite, garnet olivine, Zircon,

topaz, sillimanite, kyanite and quartz and its varieties,

chalcedony, flint and jasper; epidote, staurolite, muscovite,

biotite, natrolite, Talc, chlorite, serpentine, kaolin, sphene,

apatite, garnet, wollastorite and andalusite

Study of Petrological microscope and its parts inclusive of polaroids and their function, observation of Beckeline and relative refractive index.

Study of Pleochroism in Biotite, Hornblende, Tourmaline, Hypersthene, Andalusite and Staurolite, Study of twinkling in calcite.

Identification of following important rock forming, minerals under the microscope on the basis of optical properties—quartz, orthoclase, microcline, plagioclase, nepheline, biotite, muscovite, augite, hypersthene, hornblende, actinolite, tremolite, olivine, garnet staurolite, sillimanite, Kyanite, Epidote,

Field Training :

Geological field work for at least 3 days duration and report thereon the field work would be carried out locally alongwith the collection of specimens.

APPENDIX—II

B.Sc. (Pass) Second Year Examination, 1986

Scheme :

Min. Pass Marks 36

M M. 100

Paper I—Palaeontology and Structural Geology.

3 hours duration

50 marks

Paper II—Petrology.

3 hours duration

50 mark

PAPER I

Palaeontology and Structural Geology

SECTION A—PALAEONTOLOGY

Definition; scope, sub-division and relationship of Palaeontology with other branches.

Fossils—condition necessary for preservation—modes of preservation—uses.

Morphology, classification, stratigraphic importance range in time and distribution in India of following groups :

1. Protozoa (Foraminifera)
2. Arthropoda (Trilobita)
3. Coelenterata (Corals)
4. Echinodermata (Echinoidea, Crinoidea, Blastoidea)
5. Graptoloidea
6. Brachiopoda
7. Mollusca :
 - (1) Lamelletebranchia Bivalvia
 - (2) Gasteropoda, and
 - (3) Cephalopoda :
 - (a) Nautiloidea
 - (b) Ammonoidea
 - (c) Dibranchia.

Study of the important morphological Characters of the following plant fossils.

Vetebraria, Glossopteris, Gangamopteris, Ptilophyllum.

PALAEONTOLOGY

Text Books :

1. Woods, H. Invertebrate Palaeontology.
2. Barmer, General Palaeontology.
3. Easton Palaeontology.

Reference Books :

1. Davies, A.M., Introduction to Palaeontology, Thomas Murly & Sons, England.

SECTION B—STRUCTURAL GEOLOGY

Attitude of planes (Bedding planes) and lines—Dip (true and apparent), strike, pitch and plunge. Bed apparent and vertical thickness. Primary features indicating top direction of beds. Criteria to determine top and bottom sequence. Elements of mechanical principles of rock deformation. Morphology of folds and faults. Their geometric and genetic classification and recognition in the field. Elementary ideas of the Mechanics of folding and faulting.

Unconformity its kinds and recognition in the field.

Overlap and offlap, inliers and outliers.

Cleavage, lineation, joints, structure of igneous rocks. Salt Domes.

Field work :

Field work for one week at the places of Petrological, Structural & Palaeontological interest within the state of Rajasthan.

Text Books :

1. Structural Geology by M.P. Billings (Asia).
2. Chiplonkar G.W. : Geological Maps.
3. Dey, A.K., Geology of India.
4. Krishnan M.S. : Geology of India and Burma, Higginbotham Madras
5. Weller Stratigraphic Principles and Practice.
6. Geology India by D.N. Wadia Mc Graw Hill Publishing Company.

Reference Books :

1. Krishnan M. S. Geology of India.
2. Dunbar (Toppan) Principles of Stratigraphy.

Books for Practical work :

1. Chiplonkar, G.W. Geological Maps.
2. Plati series (V), Agshe series.

PAPER II

PETROLOGY

Nature and scope of petrology—rocks, their division into igneous, sedimentary and metamorphic groups.

Elementary knowledge of the constitution and composition of magmas.

Igneous rock—Plutonic, Hypabyssal and Volcanic—Intrusive and extrusive forms—structures, textures and micro structures.

Classification of igneous rocks. Crystallisation of simple unicomponent and bicomponent silicate melts.

Crystallisation of common basaltic magma.

Bowen's reaction principle—differentiation—Assimilation.

Study of Alkaline rocks Pegmatites. Lamprophyres and ultrabasic rocks.

Processes of formation of sedimentary rocks—weathering of rocks—decomposition and disintegration of rocks—transportation, deposition and products.

Sedimentary rock—their structure, textures and composition—source, size and shape of the constituents. Residual, mechanically transported, chemical and organic deposits—Basins of deposition and depositional environment. Heavy mineral analysis—Mineral province—sorting.

Study of common sedimentary rocks.

Definition of metamorphism—agents and types of metamorphism. Zones of metamorphism—concept of grade zones and facies of metamorphism.

Textures and classification of metamorphic rocks.

Kinds of Metamorphism and their products—cataclastic, Thermal and Regional metamorphism. Dynamothermal metamorphism of argillaceous, arenaceous, calcareous and basic igneous rocks.

Injection metamorphism, Retrograde metamorphism, Metasomatism. Anatexis and Palingenesis, Elementary ideas of granulization, Study of important Metamorphic rocks.

PETROLOGY

Text Books :

1. Tyrrel, G.W. : The Principles of Petrology, Matheun & Co London
2. Harker, A. : Petrology Mc.Graw—Hill Book Co. Inc. New York.
3. William : Turner & Gilbert, Petrography

Reference Books :

1. Jackson, J. Text Book of Lithology.
2. Hatch & Walos. Petrology.
3. Smith, H.G. Minerals & Microscope.
4. Kerr, Optical Mineralogy.

PRACTICALS II YEAR T.D.C. (PASS COURSE)

PALAEONTOLOGY

Identification, description and drawing in different views of the following fossils :—

Alveolina, Nummulites, Monograptus, Diplograptus, Favosites, Calceola, Zephrentis, Fenestella, Calymene, Paradoxide, Trinucleus, Phacops, Olenus, Olenellus, Terebratulina, Productus, Spirifer, Rhynchonella, Atrypa, Athyris, Lingula, Strophomena, Arca, Pecten, Trigonina, Cardium, Hippurites, Venus, Lima, Inoceramus, Alectryonia, Gryphaea, Exogyra, Spondylus, Trochus, Conus, Natica, Voluta, Turritella, Physa, Murex, Cypraea, Bellerophon, Nautilus, Goniatites, Ceratites, Acanthoceras, Hamites, Bolemnite, Turritites, Baculites, Phylloceras, Cidaris, Micraster, Holaster, Hemiaster, Glossopteris, Gangamopteris, Virebraria, Ptillophyllum.

STRUCTURAL GEOLOGY

Study of Topographical maps and use of Clinometer compass.

Topographical maps and reading of the physiographic features. Drawing profiles along given direction,

Simple dip and strike problems. Determination of dips and strikes of beds.

Solution of simple problems connected with true and apparent dips true and vertical thickness and width of the outcrop by calculation and geometrical methods.

Completion of outcrops : Determination of thickness of beds. Identification of structural features in hand specimens.

Drawing of profiles and sections showing the following features : Simple beds, folds, faults, unconformities, overlaps and offlaps and intrusions.

PETROLOGY

Neat drawing of the different forms assumed by intrusive igneous rocks. Study and recording of the typical textures of plutonic, hypabyssal and volcanic rocks.

Systematic macroscopic and microscopic study of the following rock types.

Igneous rocks :

Granite, Pegmatite, Aplite, Syenite, Nepheline, Syenite, Diorite, Gabbro, Norite, Dunite, Peridotite,

Syenite porphyry, Diorite porphyry, Basalt, Obsidian Lamprophyre, Phonolite and trachyte.

Microscopic work, Neat drawings, in colours of the followings, microsections—Granite, Syenite, Diorite, Gabbro, Dunite, Pyroxenite, Dolerite, Rhyolite Basalt.

Sedimentary and Metamorphic rocks :

Study of typical textures of sedimentary and metamorphic rocks. Systematic megascopic and microscopic study of the following rock types. Sand stone Arkose shale lime stone schist gneiss Marble quartzite and charnockite.

Field Training :

Field work for one week at the places of Petrological, structural and palaeontological interest with in the state of Rajasthan, along with the collection of samples and report thereon.

APPENDIX—III

B.Sc. (Pass) Third Year Examination, 1986

Scheme :

Maximum Marks 100

Minimum Prss Marks 36

Paper I—Stratigraphy and Geology of India.

3 hours duration

50 Marks

Paper II—Economic Geology and Mineral Economics

3 hours duration

50 marks

Paper I—Stratigraphy and Geology of India

Stratigraphy and its relation with other branches—Principles of Stratigraphy—environment of deposition—facies—Lithology, Homotaxis and contemporaneity.

Standard Stratigraphical Scale.

Imperfections in geological records—Principles of correlation.

Palaeogeography of India in Permo-carboniferous period. Physiographic subdivisions of India.

Stratigraphical divisions in India and their standard equivalents.

Stratigraphy, distribution, lithology, structure, correlation and mineral riches of the following Archaeans—Cuddapahs and the Vindhya with special reference to Rajasthan.

Palaeozoic Group S

distribution succession, climate, sedimentation, correlation, fossil content and mineral riches of the Gondwana system.

Geology of India through Triassic period—Triassic of Spiti lithology, succession and fossil contents.

Jurassic succession of Kutch and Cretaceous succession of Trichinopoly—Bagh beds and Lameta Ghat Series.

Deccan traps—Origin, Composition distribution and age—Inter-trappean beds—succession, lithology fossils and distribution. Tertiary period—the sub-divisions, distribution, succession, lithology and fossils—Oil bearing strata and their depositional basins and environment.

Siwalik formation—distribution, lithology, depositional environment and fossils—typical vertebrate fossils.

Miocene and pleistocene of Assam. Peninsular India and Kashmir. Recent deposits. Pleistocene and recent glaciation. Structure and Tectonics of India. Evolution of the Indian Sub-continent.

Paper II—Economic Geology and Mineral Economics :

Economic Geology and its relationship with various branches of Geology. Magma and its relationship with mineral deposits. Ore and gangue minerals. Historical development of Economic Geology. Processes of Mineral formations—Primary and secondary processes, Magmatic, Pneumatolytic, hydrothermal, contact metasomatic. Evaporation, Oxidation and supergene enrichment, sedimentation, mechanical concentration, residual concentration and metamorphism.

Classification of mineral deposits—outlines of Lindgren's and Bateman's classification. Controls in mineralization.

Important ores, their composition, physical properties. Mode of occurrence, association, origin distribution in India and uses of the following metals, Gold, silver, copper, lead, iron, manganese, chromium, titanium, aluminium, magnesium, uranium and thorium.

Raw minerals required for the following industries the mode of occurrence, physical properties, chemical composition and distribution in India—Refractories, Abrasives, ceramics, cement, gemstones, glass, paint, fertilisers.

Coal and petroleum—their occurrences, distribution and origin—oil traps. Building stones characters, distribution and mode of occurrence.

Mineral wealth of Rajasthan.

Field work :

Economic Text-Books B.Sc. (Pass) Final Year T.D.C. Economic Geology and Mineral Economics :

1. Batman, A.M. : Introduction to economic mineral deposits.
2. Wadia, M.D. : Minerals of India. Book Trust of Publication.
3. Rao, T.C. & Gokhale, K.V.G.K. : Ore deposits of India, their distribution and processing.
4. Krishna Swamy, S. : India's mineral Resources. Oxford and IBH, New Delhi.
5. Singh, R.K. & Sharma, N.L. : Mineral Economics Oxford & IBH Publishing Co, New Delhi.

Reference Books :

1. Jensen & Batman, A.N. : Economic mineral deposits.
2. Park and Mac. Diasmid : Mineral deposits.
3. Bain, M.F. & Leith, C.K. : Mineral Economics Mc. Graw Hill Book Co.
4. Singh, R.K. : A Treatise of Industrial minerals of India. Allied Publishers Pvt. Ltd., Bombay.
5. Pandya Dr. M.J. : Mineral Economics and Taxation in India. M.G.M.I. Publication India.
6. Hateb, F.H. : An introduction to study of ore deposits, George Allen & Unwin

Practicals**IIIrd Year T.D.C. (Pass Course)****Stratigraphy :**

Neat drawing of the standard stratigraphical scale, showing against each division or divisions the typical lithographic units, the type fossils, the faunal assemblages, their population and range etc.

Neat drawings the palaeogeographical maps of India Carboniferous period. Plotting of various geological formation in outline map of India.

Neat drawing of the geological map of India.

Neat drawing of the structural and tectonic map of India.

Identification and description of the following rocks : Banded Hematite, Quartzite, Khondolite, charnockite, Gondite, Vindhyan Sandstone, Vindhyan Limestone, Malani, Rhyolite, Productus limestone, Talchir Shale, Barakar sandstone, Deccan trap, Golden Oolite, Dhosa Oolite, Nummulitic limestone, Fenestella shales.

Economic Geology & Mineral Economics :

Making neat diagram depicting the following :

- (a) Gossan Oxidation Zone and Supergene enrichment zone.
- (b) Structural traps for oil accumulations.
- (c) Stratigraphical trap for oil accumulations.

Systematic study, identification, description, mode of occurrence and Uses of the following minerals in hand specimens :-

Hematite, Magnetite, Limonite, siderite, Pyrite, Pyrrhotite, Pyrolusite, Psilomelanite, Rhodonite, Rhodochrosite, Chromite, Ilmenite, Wolframite, Chalcopyrite, Chalcocite, Bornite, Cuprite, Malachite, Azurite, Galena, Cerrusite, Sphalerite, Cassiterite, Magnesite, Bauxite, Beryl, Realgar, Orpiment, Stibnite, Molybdenite

nite, Cinnabar, Barite, Pitchblende, Asbestos, Muscovite, Graphite, sillimanite, Kyanite, Zircon, Clays, Garnet, Corundum, Gypsum, Talc. Apatite, Phosphate nodule, Calcite, Coal and its varieties.

Systematic determination by simple blow pipe tests of the following minerals :—

Galena, Chalcopyrite, Chromite, Haematite, Magnetite, Sphalerite, Barite, Pyrolusite, Magnesite, Pyrite, Siderite.

In an outline map of India plotting occurrence of the following minerals :—

Iron ore, Coal, gold.

Copper ore, Pb-Zn Ag Ore, Chrome ore, Manganese ore, Aluminium ore, Atomic minerals, rock-phosphate, Mica, Diamond Iron ore, coal, Gold :

Distribution of important minerals in the outline map of Rajasthan.

Plane table and chain Survey.

Field Training :

Field work for atleast one weeks duration at the places of Geological interest pertaining to the Theory papers in the states of Rajasthan/Gujarat/Madhya Pradesh and report thereon alongwith the submission of field specimens.

APPENDIX—IV

B.Sc. (Hons.) Examinations (Two Years Course)

Part—I Examination—1985

(NEW SCHEME)

Scheme :

Four Papers	Duration	Max. Marks	Min. Pass Marks
Paper I	3 hours	100	160
Paper II	3 hours	100	
Paper III	3 hours	100	
Paper IV	3 hours	100	

Syllabus :

Paper I—Physical Geology, Geomorphology and Geodynamics.

1. Geology : Its subdivisions, scope, aims, applications, methods of study and relationship with other Sciences, Geological agents, Weathering Coral reefs.
2. Elementary ideas about shape size, origin and age of the earth, earthquakes; volcanism their relates on to global forms and interior of the earth.
3. Structure, distribution and origin of mountains. Isostasy, and Geosynclines.
4. Radioactivity radiometric methods of dating origin of continents and oceans. Elementary ideas of continental drift, & plate tectonics Sea-floor spreading. Island Arcs and Ice ages.

Paper II—Palaeontology :

1. Definition and subdivisions, Sample collections and preparation. Modes of preservation of fossils and incompleteness of palaeontological record. Uses of fossils as stratigraphic ecological and evolution indicators. Broad classification of animal kingdom.
2. Morphology and geological distribution of Foraminifera, Corals, Graptolites Echinoides and classification of echinoides.
3. Morphology and geological distribution of Brachiopods Trilobites and classification of brachiopods.
4. Morphology and geological distribution of Bivalves, Gastropods, Cephalopods, Elements of the evolution of cephalopods. An elementary knowledge of the important Gondwana Plants and Tertiary Mammals of India.

Paper III—Crystallography and Mineralogy :

SECTION 'A'
(CRYSTALLOGRAPHY)

1. Symmetry element, Parameter and Index system of Weiss and Miller. Classification of Crystal systems. Crystal Zones, Twinning. Use of contact and reflection goniometer.
2. Study of the holohedral classes of various systems and hemihedral classes of the cubic and Hexagonal systems.

Streographic and gnomonic projections Elementary ideas about the derivation of crystal classes and internal structure of crystals.

SECTION 'B'
(MINERALOGY)

3. Elements of Crystal chemistry : Isomorphism polymorphism, ionic radii, coordination number, bonding in solids. Classification of silicates.
4. Physical properties of minerals—Determination of RI and birefringence. Uniaxial and Biaxial minerals, Double refraction Quartz wedge, unit retardation and accessory plates. Concept of uniaxial indicatrix, formation of uniaxial and biaxial interference figures. Optic axial angle, optic sign, and pleochroic scheme.
5. Study of the chemical composition, important Physical and optical properties and paragenesis of the following groups : Quartz, Feldspars, Felspathoids, Micas Amphiboles, Pyroxenes, Aluminosilicates Garnet, Olivine and carbonates epidotes.

Paper IV—Structural Geology and Sedimentary Petrology :

SECTION 'A'
(STRUCTURAL GEOLOGY)

1. Definition, scope, utility and relationship with other branches of geology. Criterion for recognition of top and bottom sequence
Elementary ideas of Stress : Spin and Strain
2. Unconformity, classification, geological significance and recognition in the field. Joints classification and economic significance.
3. Geometric and genetic classifications and description of folds and faults. Their characteristic features. Effects on

outcrop pattern and economic importance. Criterion of their recognition in the field. Thrust Nappe, Window klippe, outlier and inlier.

4. Elementary ideas of planar and linear structures. Study of geological maps and sections. Plotting of planar and linear structures.

SECTION 'B'

SEDIMENTARY PETROLOGY

Processes of sedimentation and formation of sedimentary rocks. Concept of sedimentary facies. Diagenesis and lithification structures. Simple Textures : Mechanical Chemicals and Organic Classification of sedimentary rocks. Heavy minerals and their significance.

Graphic methods of representation of results of sedimentary analysis. Petrographic study of the following rock type : Conglomerate, Greywacke, Sandstone. Arkose, Shale Mustone, Silistone, Marl, limestone, dolomite, Laterite, Peat. lignite, coal.

Geology Hons. Practicals (Two Years Course)

Part—I Examination 1985

(NEW SCHEME)

Scheme :

Max. Marks—200

Min. Pass Marks 80

Identification and morphological description of important invertebrate vertebrate and plant fossils with special reference to India.

Clinographic projection of the crystals of the Cubic systems. Identification of crystal models corresponding to the syllabus of the theory paper. Study of simple twins. Stereographic projection of the crystals of the Cubic, Tctetragonal System and calculation of the axial ratios.

Identification in hand specimens and description of important rock forming minerals under microscope.

Determination of length fast, length slow characters of minerals, Determination of optic sign.

Interpretation of geological maps. Campletion of out crops Simple problems of the width of outcrop, thickness of the stratatruc and apparent dip, strike and throw of the fault. Solution of truc and apparent dip by the stereographic projection. Solution of simple structural problem by storeographic projection.

Identification in hand specimen and description of important sedimentary rocks.

Identification and microscopic description of common sedimentary rock types Preparation of histogram.

Field Work :

Field work of 15 days duration in the state of Rajasthan, covering the various disciplines of theory papers and report, thereon alongwith the submission of field specimen.

APPENDIX—V

B.Sc. (Hons.) Examination (Two Years Course)

Paper II—Examination, 1986

(NEW SCHEME)

Scheme :

Four Papers	Designation	Max Marks	Min. Pass Marks
Paper V	3 hours	100	190
Paper VI	3 hours	100	
Paper VII	3 hours	100	
Paper VIII	3 hours	100	

Syllabus

Paper V—Igneous and Metamorphic Petrology.

Section 'A'

1. Form, structures and textures of igneous rocks, Crystallization of unicomponent and bicomponent systems involving continuous and discontinuous reaction relations. Simple Ternary systems.

2 Reaction principle in geology process of differentiation and Assimilation Origin of magmas.

Crystallization and differentiation of common basaltic magma classification of igneous rocks. Petrography, mode of occurrence and origin of following igneous rock groups : Granite-Diorite Group, Alkline rocks, Mafic and Ultramafic rocks, Lamprophyres, Pegmatites, and mono-mineralic rocks.

Section 'B'

Metamorphic Petrology :

Metamorphism its agents processes and kinds, Metamorphic textures and structures. Metamorphic grades, Zones and Facies. Metamorphic differentiation Retrograde metamorphism. Anatexis and Palingenesis and Metesomataelism classification of metamorphic rocks.

Thermal, regional and catastic metamorphism of arenaceous argillaceous and impure calareous sediments and basic and ultramafic igneous rocks Petrographic and genetic study of migmatites and

Paper VI—Economic Geology and Mineral Economics :

Economic Geology :

1. Economic Geology and its relationship to various branches of geology. Brief history of the uses of minerals and

the development of economic geology. Materials of mineral deposits and their formation. Magma and its relationship to mineral deposits, classification of Mineral deposits. Importance of mineral deposits.

2. Brief description of the following processes of the formation of mineral deposits : Magmatic concentration contact metasomatic, Hydrothermal processes, cavity filling and metasomatic replacement sedimentation, evaporation, residual concentration, oxidation and supergene sulphide enrichment, metamorphism

3. Distribution, modes of occurrence and uses of the important metallic and non-metallic mineral deposits of India, with special reference to Rajasthan Coal & Petroleum deposits of India.

Controls Mineralization

Mineral Economics :

Mineral economics and its concepts. Tenor, grade and specifications of economic minerals for the various industries. Elements of ore-dressing, viz hand sorting crushing, jigging, flotation and heavy mineral separation. Strategic, critical and essential minerals conservation and substitution of ore minerals National Mineral policy.

Paper VII—Principles of Stratigraphy and Geology of India.

Development of stratigraphy and founding of Geologic system. Stratigraphic relationships. Basic principles of correlation.

Indian stratigraphical units and their European/Standard equivalents.

Detailed study of Precambrian formations of India including their distribution, occurrence and economic importance.

Stratigraphy, distribution, occurrence, fossil contents and economic importance of the Tertiary and Recent formations of India.

Paper VIII—Applied Geology :

Preliminary study of geological and geophysical prospecting sampling and ore estimation, elements of open and underground mining. Elementary knowledge of Drilling blasting and explosives.

Principles of mineral dressing. Beneficiation methods, applicable to lead, zinc, copper. Elements of Ground water geology. Hydrological cycles. Occurrence and distribution of ground water geological formations as Aquifers. Distribution of Ground water in Rajasthan.

Elementary ideas of application of geology in Civil Engineering works; dams, tunnels, building and road material.

Objects of surveying, Topographic maps and their uses in geology, Constructions and uses of important surveying instruments.

Clinometer, prismatic and Brunton compass and Dumpy level, chain and plane table.

Geology Hons. Practicals (Two Years Course)

Part II—Examination, 1986.

Scheme :

Max. Marks—200

Min. Pass Marks—80

Identification in hand specimen and description of the important igneous and metamorphic rocks.

Identification and microscopic description of metamorphic rocks.

C.I.P.W. norm calculation of oversaturated and Saturated igneous rocks. Calculation of Niggli and ACF values.

Identification of important economic minerals and their distribution in India. Blow pipe analysis of simple ores. Distribution of economic minerals in Rajasthan.

Identification and description of important stratigraphic rocks of India. Stratigraphic and important palaeogeographical maps of India.

Survey by Chain, Plane Table and Prismatic Compass.

Field work :

Field work for a duration of 3 weeks in the states of Rajasthan/Gujarat/Madhya Pradesh pertaining to the disciplines of theory papers and report thereon alongwith submission on field specimens.

Books recommended :

Paper I—

Holmes, A Physical Geology, Thomas Nelson Sons. London.

Spencer—Basic concepts of Physical Geology.

Datta, A.K.—Physical Geology, S.K. Bose, 38 Hazari Bagh Road, Ranchi.

Longwell, Knoff and Flint : Outlines of Physical Geology, John Wiley and Sons.

S. W. Spencer—Introduction to the structure of Earth Crust (Mc Graw Hill).

Paper II—

Woods, H. Invertebrate Palaeontology.

Easton : Palaeontology.

Bavies, A.M. Introduction to Palaeontology Thomas Murty & Sons, England.

R.S. Brock and Twenhofel W.H., Principles of Invertebrate Palaeontology (Mc Graw Hill)

Paper III—

Read, H H., Rutals Elements of Mineralogy, Thomas Murty & Co., London.

Mason, Berry, Mineralogy, Asia Publication.

Ford, W.E. Dana's Text Book of Mineralogy, John Wiley and Sons, New York.

Phillips, F.C. An introduction to crystallography Bucrger, M.J., Elementary crystallography (J. Wiley & Sons.)

R.C. Evans—Crystal Chemistry (Combridge University Press).

W.A. Deer, R.A. Howie and J. Zussman—Introduction to Rock forming Minerals (Longmans)

Paper IV—

1. Structural Geology by M.P. Billings (Asia)

2. Chiplonkar, G.W. Geological Maps.

3. An outline of structural Geology-J. Wiley & Sons. B.E. Hobbs, Means, W.D. & William. P.F.

4. Ramsay, H. G. Folding and Fracturing of rocks (Mc Graw Hill, London).

Tyrrell. Principles of Petrology Metheun and Matheun Co., London Harker Petrology Mc-Graw Hill Book Co., Inc. New York William Turner and Gilbert Petrography Jackeon—Text Book of Mineralogy.

Kerr—Optical Mineralogy.

Haung. W.T. Petrology Mc Graw-Hill Book Co, Inc. New York, 1962.

Folk, R L. Petrology of Sedimentary rock (Hamphill Pub. Co)

Paper V—

Tyrrell : Principles of Petrology (Matheun and Matheun Co. London).

Harker Petrology—Mc.Graw Hill Co , London.

William Turner and Gilbert—Petrography

Jackson Text Book lithology.

Kar—Optical Mineralogy.

Haung, W.T Petrology – McGraw Hill.

Turner, F.J. & Verhooge J, Igneous and metamorphic petrology (McGraw Hill).

Winkler, H.G.F. Petrogenesis of metamorphic rocks (Springer Verlag) Bowen, N L. Evolution of Igneous rocks.

Paper VI—

Bateman, A.M.

Economic Mineral Deposits, (J. Wiley & Sons)

Smirnov, V.I. Geology of Mineral Deposits (MIR, Moscow)

Park C.F. and Mac. Diarmid (W.H.)

Ore and Deposits (W.H. Freeman)

Krishanaswamy Mineral Resources of India.

Sinha, R.K. and Treatise on Industrial Minerals of India.

Sinha, R.K. and Sharma N.L. Mineral Economics.

Geology and Geotechnics, (Mc Graw Hill)

Schultz, J.K. Cleaves, A.B., Geology in Engineering (J. Wiley and Sons).

Recasted Syllabus :

M Sc. (Technology)—Applied Geology Examination, 1985.

4 Theory Papers of 100 marks each

Paper I—Structural Geology and Micropalacontology

3 hours, 2 Section

100 marks

Paper II—Mineral Exploration, Mining Geology and Geostatistics.

3 hours,

100 marks

M Sc. TECH. 1985

Paper II—Minerals Exploration Mining Geology and Geostatistics

Section 'A'

Exploration and mining Geology outline of growth and development of mining geology gathering and presenting geological

data including geologic mapping in underground mines Ore search and guides. Drilling for geologic information—planning of drill-holes logging of drill hole data.

Sampling ore bodies and estimating ore researves. Examination and evaluation of prospects and mines. Role of Geologist in exploration and mining consulting geologists. Exploration Geophysics—Fundamentals of geologicals prospecting. Methods and applications. Air borne and ground geophysics planning and co-ordinating geophysical work. Exploration Geochemistry Principles of geochemical prospecting: exploration geochemistry sequence: methods and applications. Field and laboratory analytical methods. Assaying methods. Treatment of geochemical data. Ore Microscopy—Principles of Ore-microscopy significances and procedures of polished section etching scientific and industrial application of ore microscopy.

Section 'B'

Mean, Median, mode, Standard deviation, Skewness, Kurtosis, Graphical representation of data. Probability and Probability distribution; Normal, Binomial, Poisson, Longnormal Testing of the Hypothesis 't' test 'F' test and chi-square test Analysis of variance— one way, covariance, correlation and Regression. Moving averages, Kriging and etc application in Mining Geology. Elements of Multivariate analysis, Elementary nonparametric statistics, Elementary computer programming.

Paper III—Mineral Technology and Mineral Economics.
3 hours 100 marks.

Paper IV—Engineering Geology and Ground water.
3 hours 100 marks.

Syllabus of Paper II is given in the minutes of B.O.S. Meeting held on 8th Jan., 1983.

M.Sc Tech. Practical Examination Scheme for 1985.
300 marks.

Time 16 hours spread over 4 days, 4 hours each day.

Practical Group A :

2 days Practicals for 4 hours each day. Total 160 Marks

Ore Microscopy	20 marks
Mining Geology Problems	20 marks
Assaying	20 marks
Survey	15 marks
Geostatistical Problems	20 marks
Viva-voce	15 marks
Field work	50 marks

Total

160 marks

Group B :

2 days Practicals—4 hours each day. Total 140 marks

Micropalaeontology 20 marks

Structural Geology 20 marks

Ground water and Engineering Geology

Problems 20 marks

Problems connected with Ore-dressing 20 marks

Viva-voce 15 marks

Laboratory records 45 marks

 Total 140 marks
Field Training Programme :

- (1) Structural mapping and report thereon.

21 days 20 marks

- (2) Mineral Exploration training at an operating mine and report thereon.

21 days 20 marks

- (3) Training at Ore-dressing Laboratory Ground Water Project and Engineering Projects and report thereon

21 days 10 marks

MINUTES OF THE MEETING OF THE ADHOC COMMITTEE
OF COURSES IN RAJASTHANI STUDIES HELD ON 7-9-83
AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRE-
TARIAT, UNIVERSITY CAMPUS, JAIPUR.

Present :

- | | |
|------------------------|-----------------|
| 1. Dr. H.L. Maheshwari | <i>Convener</i> |
| 2. Dr. K.S. Shekhawat | |
| 3. Dr. G.N. Sharma | |

1. The Committee prepared a new panel of examiners in terms of clause 2(a) of Statute 25 of the University Hand Book Pt. II (Appendix-I).

2. The Committee recommends the courses of Study and text books for the following examinations in the light of Academic Council Res. No. 26 dated 24/25 May, 1983 and the Syndicate Res. No. 2 dated 3/4 June, 1983 :

- (a) First Year T.D.C. (Pass Course) Examination, 1986—
No Change.
- (b) Final Year T.D.C. (Pass Course) Examination, 1986—
(Appendix-II)

3. The Committee could not offer any comments on the report of examiners and setting of question papers. Since these courses are new one and no examination has so far been conducted.

The meeting ended with a vote of thanks to the Chair.

Sd/-
Dr. H.L. Maheshwari
Convener

APPENDIX-I

PANEL OF EXAMINERS

(A) Internal :

Experience

- | | |
|--|--------------------|
| (1) Dr. Hira Lal Maheshwari,
Deptt. of Hindi,
Univ. of Rajasthan,
Jaipur. | 27 years |
| (2) Dr. D.S. Manohar,
Deptt. of Hindi,
Univ. of Rajasthan,
Jaipur. | 27 years
approx |
| (3) Dr. N K. Bhanawat,
Deptt. of Hindi,
Univ. of Rajasthan,
Jaipur. | 25 years
approx |
| (4) Dr. M.G. Sharma,
Deptt. of Hindi,
Univ. of Rajasthan,
Jaipur. | 28 years
approx |
| (5) Shri Bhanwar Singh Samaur,
Lecturar, Deptt. of Hindi,
Govt. College,
Churu. | |
| (6) Dr. Govardhan Sharma,
Todi College,
Laxmangarh (Sikar). | |
| (7) Dr. Mahavir Prasad Sharma,
Govt College,
Kotputali (Jaipur). | |

(B) External :

- (1) Dr. K.S. Shekhawat,
Head, Deptt. of Rajasthan,
Jodhpur.
- (2) Dr. N.N. Joshi,
Prof, University of Udaipur,
Udaipur.
- (3) Dr. Bhola Shanker Vyas,
Prof., Banaras Hindu University,
Varanasi.
- (4) Shri Rawat Saraswat,
D-282, Meera Marg,
Bapu Nagar, Jaipur-6.

प्रश्न पत्र—पद्य

- (1) द्रौपदी विनयः कविया रामनाथ रचित, सम्पादक डॉ० कन्हैलाल सहल, बंगाल हिन्दी मण्डल, कलकत्ता (प्राप्ति स्थान—भारती भण्डार लीडर प्रेस, प्रयाग)

..... 40 मार्क्स

- (2) राजस्थानी काव्य संकलन प्रकाशक : जोधपुर विश्वविद्यालय जोधपुर

दोनों पुस्तकों से व्याख्याएं 40 अंक

दोनों पुस्तकों से प्रश्न 60 अंक

 100

प्रश्न पत्र—2 गद्य—

- (1) मुहता नैरासी दो व्याप्त, भाग 3, पृष्ठ 58 से 125 सम्पादक-श्री बदरी प्रसाद साकरिया, प्रकाशक प्राच्य विद्या प्रतिष्ठान, जोधपुर

- (2) हूं गौरी किण पीवरी लेखक-श्री यादवेन्द्र शर्मा, "चन्द्र" प्रकाशक राजस्थान भाषा प्रचार सभा, डी-282 मीरा मार्ग, बनीपार्क, जयपुर-6

अंक विभाजन—दोनों पुस्तकों से व्याख्या— 40

दोनों पुस्तकों से प्रश्न 60

 100

प्रश्न पत्र—3 मध्यकालीन काव्य प्रश्नपत्र—1

गोरा वादल चरित चौपई हेमरत्न सूरिरचित, सम्पादक, मुनि जिन विजय, प्रकाशक—राजस्थान प्राच्य विद्या प्रतिष्ठान, जोधपुर, आरम्भ के 150 छन्द

- (4) मीरा वृहद पदावली, भाग प्रथम, सम्पादक, पुरोहित हरिनारायण, प्रकाशक—राजस्थान प्राच्य विद्या प्रतिष्ठान, जोधपुर, आरम्भ के 150 छन्द अंक विभाजन— दोनों पुस्तकों से व्याख्या

40 अंक

दोनों पुस्तकों से प्रश्न

 60 अंक

प्रश्नपत्र — 4	राजस्थान भाषा और साहित्य का इतिहास तथा निबन्ध	
	अंक विभाजन—राजस्थानी भाषा	30
	साहित्य का इतिहास	40
	राजस्थानी भाषा में एक साहित्यक	
	निबन्ध	30

अभिस्तावित ग्रंथ—

- (1) सेनारिया, डॉ० मोतीलाल—राजस्थानी भाषा और साहित्य, हिन्दी साहित्य सम्मेलन, प्रयाग
- (2) शेखावत सौभाग्य सिंह—राजस्थानी निबन्ध संग्रह, हिन्दी साहित्य मन्दिर, जोधपुर
- (3) माहेश्वरी डॉ० हीरालाल—राजस्थानी भाषा और साहित्य, आधुनिक पुस्तक भवन, कलकत्ता 7
- (4) सांस्कृतिक राजस्थान, भाग—1
प्रकाशक—अधिक भारत वर्षीय मारवाड़ी सम्मेलन कलकत्ता
- (5) सक्सेना डॉ० बाबुराम—सामान्य भाषा विज्ञान, हिन्दी साहित्य सम्मेलन, प्रयाग
- (6) स्वामी नरोत्तमदास—राजस्थानी व्याकरण प्रकाशक—सादूल राजस्थानी रिसर्च इन्स्टीट्यूट, बीकानेर
- (7) आसोपा रामकरण—मारवाड़ी व्याकरण, प्रकाशक राजस्थानी ग्रंथगार, सोजती गेट, जोधपुर ।
- (8) सहल डॉ० कन्हैयालाल—राजस्थानी कहावतें, प्राप्ति स्थान भारती भंडार, लीडर प्रेस, प्रयाग

विशेष:—

तृतीय वर्ष के लिए निर्धारित पाठ्यक्रम के प्रथम तथा द्वितीय प्रश्नपत्र के लिए निर्धारित है और प्रश्नपत्र तृतीय और चतुर्थ तृतीय वर्ष के लिए निर्धारित हैं ।

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN PSYCHOLOGY HELD ON 17/18/19TH SEPT., 1983
AND 4TH MAY, 1984 AT 12 00 NOON IN THE
VICE-CHANCELLOR'S SECRETARIAT, UNIVER-
SITY CAMPUS, JAIPUR.

Present :

1. Prof. S. N. Sinha
2. Dr. (Mrs.) B. Ghosh
3. Dr. U. C. Jain
4. Shri G. C. Prasad
5. Dr. S. S. Nathawat

(Both the external members could not attend the meeting).

1. Under Sub-Section (8) of Section 24 E of the University Act, the Board appointed Dr. S. N. Sinha, professor & Head of University Department of Psychology as Convener of the Board of Studies for a fresh term of three years.

2. Under clause (iv) of sub-section (4) of section 34 of the University Act, the Board elected Shri S. C. Prasad, Asstt. Professor of University Department of Psychology as member other than the Convener of the Board of Studies to serve on the Committee for Selection of Examiners in the subject for the year.

3. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers received from the University Teaching Department, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners and prepared a complete panel of examiners in terms of clause 2 (a) of Statute of the University Hand Book Pt. II *giving full names and correct addresses of examiners adequate number so that examiners from outside the panel may not have to be taken.*

4. The Board offered no comments on the reports of examiners and question papers set for the various examinations of 1983.

5. The Board recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Ordinances and regulations in terms of reference made by the Academic Council vide its resolution No. 26 dated 24/25 may, 1983.

I. Degree Examinations :

- | | |
|---|----------------------|
| (a) First Year T.D.C. (Pass) Examination, 1986 | } Vide
Appendix I |
| (b) Second Year T.D.C. (Pass) Examination, 1986 | |
| (c) Third Year T.D.C. (Pass) Examination, 1986 | |

*N. B. :—*Candidates are required to pass in theory and practicals separately.

II. Honours Examination :

- (a) Part I Examination, 1986.
No change.
- (b) Part II Examination, 1986.
No change.

III. Post Graduate Examinations :

- (a) Previous Examination, 1986—No change.
- (b) Final Examination, 1987—Vide Appendix II.

IV. M.Phil. Examination, 1986 : Vide Appendix III.

6. The Board considered the syllabus to translate into Hindi and resolved to recommend that Hindi translation work be done by the experts of linguistics in technical terms.

7. The Board noted the contents and spirit of the letter No. F. 3-29/80 (CP) II dated 18-2-1982 received from the Secretary, University Grants Commission, New Delhi.

8. With reference to Academic Council Res. No. 46 dated 24/25th May, 1983, the Board considered the letter No. F. 4-19/82 (ER) dated 19th January, 1983 from the Chairman, University Grants Commission, New Delhi regarding examination reforms and resolved as under :—

- (i) Syllabus made accordingly. The each serial No. is one unit.
- (ii) The Board agreed that instruction 1, 2, 3, 4 may be sent to the paper Setters. The Controller of Examination should be instructed.

9. With reference to Academic Council Res. No. 37 dated 24/25th May, 1983, the Board noted and complied the letter No. F. 3 82/CP/dated 28th July, 1982 from the Secretary, UGC, New Delhi for revising and restructuring the courses of study at the under graduate level.

The meeting ended with a vote of thanks to the Chair.

(S.N. Sinha)
Convener
B.O.S. in Psychology.

APPENDIX—I

I Year T.D.C. Arts

Paper I :—Gen. Psychology.

Max. Marks : 60

Min. Marks : 21

I. (a) Introduction :

Definition
Scope
Method

(b) Stimulus :

Light Waves
Sound Waves

(c) Measurement of Stimulus :

Energy Level changes with reference to Threshold of Stimulus.

II. (a) Motives :

Indications of Motivated behaviour.

(b) Kinds of Motives

Hunger
Thirst
Reproductive Behaviour
Maternal Drive
Achievement
Affiliation
Power Motive
Curiosity and Exploratory behaviour

(c) Measurement of relative strength of Biological Drives.

III. Feeling and Emotions.

- (a) Significance of Emotions for survival of organism.
- (b) Physiological and Biochemical changes
- (c) Behavioural aspects of Emotion.
- (d) Arousal and Emotion.
- (e) James-Lange and Cannon Band Theory of Emotion.

IV. Personality :

- (a) Multiple bases of Personality
- (b) Idiographic and Nomothetic Approaches to Personality studies.
- (c) Social, Cultural and Genetic determinants of Personality.
- (d) Trait and type theories.

- (e) Measurement of Personality-case-History.
Interview
Rating Scales
Inventories
Projective Techniques of Rorschach and T.A.

V. Intelligence

- (a) Definitions
- (b) Concepts of Convergent and Divergent Abilities.
- (c) Unifactor, Bifactor and Multifactor Theories (Thurstone).
- (d) Race and Intelligence.
- (e) Social class and Intelligence.
- (f) Measurement of Intelligence Stanforce Binet Text Weschler
Adult Intelligence Scale Ravens Progressive Matrices.
- (g) Classification of Intelligence tests.

Books for reference :—

1. Introduction to Psychology (Second edition or latest edition) by N.L. Munn, Fernald L. Dodge, Fernald Pete Highton. Mufflin, Co Boston, 1969.
2. रामनाथ शर्मा—सामान्य मनोविज्ञान की रूप-रेखा, केदारनाथ रामनाथ मेरठ, 1979-80 ।
3. रामकुमार राय—सामान्य मनोविज्ञान, भाग 1 व 2 पश्चिम प्रकाशन, बाराणसी ।
4. Morgan, C.T. and King, R.A. and Robinson N.M. Introduction to Psychology (VI Ed.) Tata Mc Graw-Hill. New Delhi (1979).
5. Hilgard, E.R. and Atkinson, R.S. : Introduction to Psychology, N.Y., Harcourt Brace.

Paper II—Practical :

Min. Pass Marks 15

Max. Marks 40

List of Practicals :

1. Human Sensory—Motor Learning Process.
2. Memory of Meaningful and Meaningless Stimuli.
3. Judgement of Emotion from Facial Expression.
4. Assessing Intelligence with a Battery of Performance Test.
5. Assessing Personality Adjustment.

Books Recommended :

1. Mohsin, S.M. : Experiments in Psychology. Orient Longmans, Bombay.

2. Parmeswaran, E.G. and Rao, B.T. : Manual of Experimental Psychology. Lalvani Publishing House, Bombay.

IInd Year T.D.C. Arts PSYCHOLOGY

Scheme :

Theory :—(Two Papers)

Max. Marks 150

Min. Pass Marks 54

Paper I—3 hrs. duration—75 marks

Paper II—3 hrs. duration—75 marks

Paper III—3 hrs. duration—50 marks

Practical : (One Paper)

Max. Marks 50

Min. Pass Marks 18

*N. B. :—*Candidates must pass separately in theory and practical.

Syllabus :—

Paper I—Abnormal Psychology

3 hrs. duration

Max. Marks 75

1. Criteria and concept of Abnormality.
2. Motivation and Adjustment.
3. Mental Mechanism and Symptoms.
4. Causes of Abnormal Behaviour.
5. Psychoanalytic Concept of Personality Structure.
6. Psychoneuroses :
 - (a) Anxiety
 - (b) Hysteria
 - (c) Neurasthenia
 - (d) Phobia
 - (e) Obsessive—Compulsive Neurosis.
7. Psychoses :
 - (a) Schizophrenia
 - (b) Schizophren
 - (c) Manic Depressive Psychosis.
 - (d) Paranoia
8. Mental Deficiency.
9. Alcoholic Mental Disorder.
10. Psychopathology of Crime and Delinquency.

Text-Book Prescribed :

Page, J. D. : Abnormal Psychology published by Tata

Mc Graw Hill : Prescribed chapters : 1, 2, 3, 4, 5, 6, 7, 9,
11, 12, 13, 14, 17 & 18.

Books Recommended :

1. त्रिपाठी, जयगोपाल—असामान्य मनोविज्ञान, हर प्रसाद भार्गव, आगरा ।
2. राय, रामकुमार—असामान्य मनोविज्ञान ।
3. Shanmugam T. E.—Abnormal Psychology : Tata McGraw Hill, New Delhi-1981.

Paper II—Social Psychology :

M. Marks 75

- I. Introduction to Social Psychology.
- II. Methods in Social Psychology.
- III. Social Cognition.
- IV. Interpersonal attraction.
- V. Attitudes :
 - (a) Formation
 - (b) Measurement
 - (c) Change
- VI. Leadership :
 - (a) Functions
 - (b) Types of Leaders.
 - (c) Theories of Leadership.
- VII. Group Behaviour :
 - (a) Psychology of Active Crowd.

Books Recommended :

1. रस्तोगी धनश्याम दास (सं.)—आधुनिक सामाजिक मनोविज्ञान, 1980, टाटा मेक्ग्राहिल—नई दिल्ली ।
1. Schnyder, D.J. Social Psychology, 1976, Addition Meslay, London.

Paper III—Practicals :

3 Hrs. duration

Max. Marks—50
Min. Marks—18

1. Bogardus Social Distance Scale.
2. Study of Values.
3. Level of Aspiration.
4. Measurement of N.Ach. by TAT Cards.
5. Adjustment inventory.
6. Free—Association (Word-list method).
7. Introversion Extroversion Test.
8. Anxiety Scale.
9. Rosenwig Picture Frustration Test.

Books Recommended :

1. चिह्न अक्षर कुमार—ननोविज्ञान में प्रयोग तथा परीक्षण, भारती सदन, पटना 1981 ।
2. Parmeshwaran, E.G. et al. Manual of Experimental Psychology, Lavania Brothers Publishers.

IIIrd YEAR T.D.C. ARTS PSYCHOLOGY

*Scheme :**Theory : (Two Papers)*

Max. Marks : 150

Min. Pass Marks 54

Paper I—

3 hrs. duration

—75 marks

Paper II—

3 hrs. duration

—75 marks

Practical (One paper)

Max. Marks 50

3 hrs. duration

Min. PassMarks 18

N.B. :—Candidates must pass separately in theory and practical.

IIIrd YEAR T.D.C. ARTS EXPERIMENTAL PSYCHOLOGY

Paper I—

3 hrs. duration

Max. Marks—75

I. Psycho-Physical Methods :

- (a) Classical.
- (b) Signal Detection.

II. Perception :

- (a) Processes of Perceptual Organization.
- (b) Determinents.

III. Conditioning :

- (a) Types : Classical and Instrumental.
- (b) Phenomena : Acquisition Extinction Generalization.

IV. Verbal Learning :

- (a) Nature.
- (b) Determinents.

V. Retention and Forgetting :

- (a) Short-term Memory (S.T.M.).
- (b) Long-term Memory (L.T.M.).
- (c) Proactive and Retroactive-Interference.

VI. Problem Solving :

- (a) Variables
- (b) Mechanisms.
- (c) Explanations.

Books Recommended :

1. त्रिपाठी लाल बच्चन : आधुनिक प्रायोगिक मनोविज्ञान, हर प्रसाद भार्गव, आगरा (तृतीय संस्करण) ।
2. Woodworth R.S. and Schlosberg H. Experimental Psychology, India Book House.

PSYCHOLOGICAL STATISTICS

Paper II—

3 hrs. duration

Max. Marks—75

1. Formulation of Hypothesis
2. Independent and dependent variables.
3. Control of Experiment :
 - (a) Frequency Distribution.
 - (b) Histogram
 - (c) Polygon.
4. Graphic Representation of Data.
5. Measures of Central Tendency :
 - (a) Mean.
 - (b) Median.
 - (c) Mode.
6. Measures of Variability :
 - (a) Range.
 - (b) Quartile Deviation.
 - (c) Average Deviation.
 - (d) Standard Deviation.
7. Sampling :
 - (a) Methods of Sampling.
8. Standard error of Mean.
9. Testing of Significance of Difference :
 - (a) Test
 - (b) Chi-Square Test :
 - Equal probability Hypotheses
 - 2×2 contingency table Yate's correction.
10. Correlation :
 - (a) Meaning.
 - (b) Rank Difference Method,

Text Books Prescribed :

1. Garrett, H.E. Statistics in Psychology and Education.
2. Townsend, T.C. Introduction to An Experimental Method.

Books Recommended :

1. कपिल, एन.के.—सांख्यिकी के मूल तत्व (सामाजिक विज्ञानों में), विनोद पुस्तक मंदिर; आगरा, 1980 ।
2. सिंह, अरुण कुमार—मनोविज्ञान समाज शास्त्र तथा शिक्षा में सांख्यिकी, नोवेल्टी एण्ड कम्पनी, पटना, 1979 ।

PRACTICAL

3 hrs. duration

Max. Marks : 50

Min. Pass Marks : 18

Syllabus :

1. Method of average error—Muller lyer Illusion.
2. Fluctuation of attention.
3. Figure ground reversal.
4. Serial Position Effect.
5. Paired associate (Massed and distributed practice)
6. Retroactive inhibition.
- 7.

Books Recommended :

1. Postman, L. and Egan, Experimental Psychology.
2. श्याम स्वरूप जलोटा—मनोविज्ञान के प्रायोगिक क्षेत्र, राजस्थान हिन्दी ग्रन्थ अकादमी—जयपुर ।

APPENDIX-II

IV. P.G. Examinations.

(a) M.A. Previous (Annual Scheme) Examination 1986.
NO CHANGE

(b) M.A. Final (Annual Scheme) Examination 1987.
NO CHANGE except in Group C, Paper—IV

Delete Nomenclature 'Psychiatry'
and add

Paper IV—Psychology of Personality

1. Clinical Versus Statistical approach to personality.
2. Personality growth—concept of self, functional autonomy.
3. Methodological issues in personality measurement :
 - (a) Convergent and discriminant validation.
 - (b) Multi-trait and Multi-factor method.
 - (c) Response set, Response bias and Response Style.
4. Cattell's Theory of Personality.
5. Guilford's theory of Personality.
6. Eysenck's Theory of Personality.
7. Roger's theory of Personality.
8. Humanistic Theory of Maslow.
9. Dollard and Miller.
10. Mowrer.
11. Wipe.
12. Cognitive aspects of Personality.

Books Recommended :

1. Hall & Lindzey, Theories of Personality.
2. Water Mischell, Theories & Assessment of Personality.

APPENDIX—III

M.PHIL. PSYCHOLOGY

Scheme :

There will be three papers of the core subject, one of which will be optional (to be selected either II 'A' or II 'B' or II 'C' or II 'D' as noted below paper) plus dissertation equal to two papers (relates to be optional papers offered).

Paper II D—Behavioural Genetics

Max. Marks—100

External Assessment—80

Internal Assessment—20

- I. Methods and Models in Behavioural Genetics.
 - (a) Physical Linkage Method.
 - (b) Convarkin Method.
 - (c) Maturation—learning Process Analysis.
- II. Mechanisms of Heredity and Behaviour.
 - (a) Mechanisms of Gene Action.
 - (b) Chemical Nature of Gene
 - (c) Genes and Protein Synthesis.
- III. Chromosomal Abnormalities and Human Behaviour :
 - (a) Downis Syndrome.
 - (b) Turner's Syndrome.
 - (c) Klienefelter's Syndrome.
- IV. Population Genetics :
 - (a) Hardy—Weinberg-castle Equilibrian.
 - (b) Forces that change Allelic Frequency.
- V. Quantitative Genetic Theory ;
 - (a) Single Gene Model
 - (b) Polygenic Model.
- VI. Family studies of Human Behaviour :

Covarience in Family Studies :

 - (a) Cognition
 - (b) Psychopathology.
- VII. Twin Studies :
 - (a) Zygosity Determination.
 - (b) Heretibility.
 - (c) Environmentality.
- VIII. Adoption Studies.
- IX. Designs for Research in Behaviour Ganetrics.

Books for reference :

1. **Behavioural Genetics : A Primer**
1980. by Plomin, De fnes & Mc clean,
W.H. Freeman
Ch. 5,7,8,9,11,12 & 13.
2. **The Intransience of Personality and ability :
Research Method & Findings**
1982 Rayman B. Cattell, Academic Press 1982,
Ch. 2,3,5, 6 & 8.
3. **Personality, Genetics and Behaviour**
Selected Papers, by H.J. Eysenck,
Ch. 2,4,8,5.

Paper II. D.—Practicals for Paper on Behaviour Genetics.

Max. Marks 100

External Marks 80

Internal Marks 20

Topics Suggested :

1. **Convarkin Methods : Contrasting Varia of kins in
cognitive test performance.**
2. **Calculation of Heritability, H and the Nature Nurture
Ratio, N.**
3. **Brief Survey of (2 to 5 cases) Ability bevitability an
within—Family vanance basis.**
4. **Brief Survey of Personality (n=2 to 5 cases) bevitabili-
ties on within Family ver basis.**
5. **Across Generations Design : Adoptive Families.**
6. **Hevitabilities calculated by Parent-Off & pring method,
with and without Genetic Parittioning.**

Book Recommended :

Raymond B. Coffell.
The Inheritance of Personality and Ability.
Academic Press N. Y. 1982,
Ch. 3 and 5 only.

**MINUTES OF THE MEETING OF B.O.S. IN ECONOMICS
HELD ON 19/20 SEPTEMBER, 1983 AT 12.00 NOON IN THE
VICE-CHANCELLOR'S SECRETARIAT (NEW-
BUILDING), UNIVERSITY CAMPUS, JAIPUR.**

Present :

- | | |
|-----------------------------|------------|
| 1. Principal S.M. Chaudhari | (Convener) |
| 2. Dr. G.S. Shekhawat | |
| 3. Shri N.K. Mehta | |
| 4. Dr. L.N. Gupta | |
| 5. Prof. S.C. Tela | (External) |
| 6. Dr. H.C. Saxena | „ |

(Prof. J. M. Joshi, Head, Department of Economics,
University of Rajasthan could not attend the meeting)

- Under sub-section(s) of Section 24(E) of the University Act, the Board unanimously elected Shri S. M. Chaudhari, Principal, G.V. College of Agriculture, Arts, Science and Commerce, Sangaria as Convener of the Board of Studies for a tenure of 3 years (Prof. J.M. Joshi conveyed his inability to serve as Convener, B.O.S. in Economics).
- Under clause (iv) of sub-section (4) of Section 34 of the University Act. the Board elected Dr. G.S. Shekhawat, Associate Prof., Department of Economics, University of Rajasthan as the member, other than the Convener of the B.O.S., to serve on the Committee for Selection of examiners in the subject for the session 1983-84.
- The Board scrutinised the statements of qualifications and teaching experience of teachers received from affiliated institutions for inclusion in the revised Panel of Examiners in terms of clause 2(a) of Statute 25 of the University Hand Book Part-II. The statements of University Department of Economics, Subodh College, Maharani's College and Rajasthan College were not available.
- Resolved that Item No. 4 of the Agenda be deferred for next meeting of the B.O.S. in Economics.
- Resolved that Item No. 5 of the agenda is also deferred for the next meeting of B.O.S. Meanwhile a circular letter from the Convener to all members of Faculty in Economics has been sent inviting their suggestions up to 3.10.1983 regarding nomenclatures & contents of papers for the III year T.D.C. Economics Exam., 1986.
- Regarding item No. 6 of the agenda. it was Unanimously resolved that the translation work of the following syllabii be got

done by the University from the professors whose names are given below on payment basis as recommended by the Faculty of Social Sciences:

Section	Translator
1. Post-graduate Classes	1. Prof. N.K. Mehta, Govt. College, Banswara
2. Degree Classes	1. Dr. L.N. Gupta, Dungar College, Bikaner.
3. Hons. & M.Phil. etc.	1. Dr. H.C. Saxena, 24/486, Sabji Mandi, Kesargang, Ajmer.

7. The Board appreciated the spirit of the U.G.C. letter No. F. 3-29/80 (C.P.) II dated 13.2.82 and F. 4/1982/(E.R.) dated 19.1.83 and resolved that the historical background and man power planning may be added in the undergraduate syllabus of third year for 1985 Exam. onwards. The gist of these two letters may be brought to the notice of all concerned.

8. Reiterating its earlier decision listed at item No. 4 of the minutes of its meeting held on 24th Oct. 1981 and item No. 3 of the minutes of meeting held on Nov. 10/11, 1982, the Board again resolved that no adhoc appointment of Examiners shall be made by the University administration without getting them approved by the Convener/committee for Selection of Examiners.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(S.M. Choudhari)
Convener,
B.O.S. in Economics

MINUTES OF THE MEETING OF THE B. O. S. IN
GEOGRAPHY HELD ON 20 SEPTEMBER, 1983
AND 6TH OCT., 1983 AT THE SENATE
HALL, UNIVERSITY CAMPUS, JAIPUR.

Present :

- | | |
|---|-----------------|
| 1. Prof. Indra Pal | <i>Convener</i> |
| 2. Dr. R.B. Singh. | |
| 3. Dr. H.M. Saxena, | |
| 4. Shri M.C. Srivastava, | |
| 5. Shri S.B. Verma, | |
| 6. Prof. A.N. Bhattacharya, | |
| 7. Dr. L.N. Upadhyay | |
| 8. Shri D.D. Sharma (Special Invitee, Secondary Board). | |

(Prof. A.N. Bhattacharya and Shri D.D. Sharma, Could not attend the meeting on 6.10.83).

1. Under Section 24E(8) of the University Act the Board appointed Professor Indra Pal, Head of the Department of Geography, University of Rajasthan, Jaipur, as Convener of the Board of Studies in Geography for a fresh term of three years.

2. Under Section 34(iv)(4) of the University Act, the Board elected Shri S.B. Verma, Head of the Department of Geography, Dungar College, Bikaner, as member other than the Convener to serve on the committee for selection of examiners in the subject for the session 1983-84.

3. The Board scrutinized the statement of qualifications and teaching experience etc. of teachers. received from the University Teaching Departments, University Colleges, affiliated institutions and other Universities for inclusion in the revised panel of examiners and revised the same as per S.25(2) (a).

4. The Board discussed the reports of examiners and question paper sets.

5. With reference to modification made by the Syndicate Resolution No. 26, dated 24/25 May, 1983 of the Academic Council that "each College shall hold a home examination for the Second Year T.D.C. class and the question paper for the said examination shall be supplied by the University".

The Board recommended No change in the Syllabus for the T.D.C. and Hons. Exam. of 1986.

It was resolved further that the syllabus for Medical Geography and Perception of the Environment be revised. Consul-

tation with the teachers concerned and will be placed before the Faculty. Similarly the syllabus of the M.Phil. will be revised by the Convener and placed before the Faculty. It was also resolved that the various special papers from IV to VIII be regrouped to make it more rational and Scientific and placed before the faculty. The courses of Diploma in Cartography be also placed before the Faculty.

6 The Board also resolved that admission to the M.Phil. Course be made after holding the interview of the applicant to judge his competency such a course.

7. The Board further resolved unanimously that at the P.G. level 12 hours of teaching of Practicals be provided per batch of 15 per week. Similarly at the undergraduate level 4 hours of teaching of Practicals be provided per week per batch of 20 students.

8. Resolved that the convener may prepare a right up of the Pract. Course at the M.A level in the form of well-defined exercises on the various items of the Syllabus and circulate the same among the Heads of P.G. departments and then finally submit it to the Faculty.

Resolved that the teachers supervising the dissertation of regular students be given relief in their teaching load as the work of supervising is time consuming.

9. *Resolved that the minimum remuneration per examiner be Rs. 50/- per dissertation at the M.A. Level.*

10. It was resolved that the University should get the syllabus translated into Hindi at the payment of rate applied by the Rajasthan Hindi Granth Academy.

11. The Board noted letter No. F. 3-29/80(CP) II, dated 18-2-1982 from the Secretary, U.G.C. regarding reviewing of prescribed text books and other reading materials in History and other subjects.

12. The Board noted D.O. letter No. F. 4.19/82(ER), dated 19.1.1983 from the Chairman, University Grants Commission, New Delhi, regarding examination reforms.

13. The Board considered letter No. F. (3)/82/CP, dated 28-7-1982, from the Secretary, UGC, New Delhi and offered no comments.

The meeting ended with a vote of thanks to the Chair.

Sd/-
Convener B.O.S. in
Geography.

MINUTES THE OF MEETING OF THE BOARD OF STUDIES
IN ENGLISH HELD ON 1ST AND 2ND OCTOBER, 1983
AT 12.00 NOON AND 9.00 A.M. RESPECTIVELY IN
THE VICE-CHANCELLOR'S SECRETARIAT
UNIVERSITY CAMPUS. JAIPUR.

Present :

1. Shri D.N. Mathur
2. Shri D.C. Bhanawat
3. Shri B.P. Singh,
4. Dr. R.C. Seth
5. Shri R.A. Joshi
6. Dr. R.K. Kaul (Dean)
7. Shri S.B.L. Rawat (Convener).

N.B.—1. Dr. Kaul attended the meeting on 1st October.
2. Dr. J.N. Sharma could not attend the meeting.

1. Under Sub-Section (8) of Section 24 E of the University Act, the Board elected Shri S.B.L. Rawat, Head of the Deptt. of English Dugar College, Bikaner, Convener.

2. Under Section 34(4) (iv) of the University Act, the Board elected Shri R.A. Joshi, Head of the Deptt. of English. S.K. College, Sikar as a member other than the Convener to serve on the committee for selection of Examiners in the subject for the year.

3. The Board scrutinized the statement of qualifications and teaching experience of teachers received from the University teaching department, University College, affiliated Colleges and other Universities for inclusion in the revised panel of examiners and revised the panel in terms of S(25) 2 (a) :

4. The Board went through the reports of examiners and the question paper setters for the Post-graduate examinations of 1983 and found that a number of them were sketchy and carelessly written.

5. The Board recommended the courses of study and text books in the subject for the various examinations with the relevant additions and/or alternations to the Regulations and ordinances as under:

- (1) The Convener informed that the proposal to have a text book for first year General English prepared by a committee for the Examination of 1985 in place of Language through Literature Part II, was dropped by the Faculty. The Board *resolved to recommend* that "A Cavalcade of Modern English Prose" by Bhatnagar R.P. be prescribed for the first year T.D.C. Examinations of 1985 and 1986.

This proposal was made by Shri D.N. Mathur and the supported by Serveshri R.C. Seth, D.C. Bhanawat and R.A. Joshi whereas Shri B.P. Singh wished that his note of dissent be recorded (Shri B.P. Singh said that he could not support the motion as he could not go through the book which was not received by him).

- (ii) Dr. R.K. Kaul suggested that courses of study for the post-graduate and undergraduate classes (pass course and Honours courses) should be revised after due consideration. He suggested that two committee (one for the Honours Course and the other for the undergraduate Pass course and the post-graduate courses) should be formed so as to look into the matter and suggest changes/additions alterations. Accordingly, a committee for the revision of Honours Course was formed as under :

1. Shri D.N. Mathur (Convener)
2. (Miss) R.R. Saxena (Maharani's College, Jaipur).
3. Dr. (Mrs.) Deepali Chandra (Kanoria „ Jaipur).
4. Sister Elise (Sophia College, Ajmer).

Another committee was formed for the Degree Course and the Post-graduate courses as under :—

1. Shri S.B.L. Rawat (Convener)
2. Shri D.N. Mathur
3. (Mrs.) Jasbir Jain.
4. Shri R.P. Bhatnagar
5. Shri D.C. Bhanawat
6. Shri R.C. Seth
7. Shri R.A. Joshi.

It was decided to hold a meeting of these committees well before the next meeting of the Board so that their recommendations may be considered at that time.

It was, however, decided in view of Sister Elise's letter (Sophia College, Ajmer) that papers for B.A. (Hons.) Part-II Examination 1984, be named as social History, and Literary movements from Renaissance to Modern Time be deleted from the nomenclature. Questions are to be set from the book English Socioal Hitory by G.M. Trevalyan alone.

6. The Board considered a letter from Dr. Kaul to the Dy., Registrar regarding Shakti Singh Mathur's Kota) letter to him. It was resolved that in future paper setters be requested to incorporate instructions to examinces in the papers that they are expected to write essay type questions and that they should not arrange them under sub-headings.

The meeting ended with a note of thanks to the Chair.

Sd/-
(S.B.L. Rawat)
Convener.

APPENDIX

Sophia Girls College, Ajmer.

Date : 13th Sept., 1983.

No. F-6/83-84/498.

To,

D.N. Mathur,
Member of the Board of Studies
in English,
University of Rajasthan,
Jaipur.

Sir.

This is with reference to the IV the paper of B.A. Honours. English (Part-I). It consists of Social History of English and the four literary movements. From our personal experience in the class room, we feel that it would be more relevant if this paper could be deleted from the course and substituted with a paper that contains Essay ranging from the 18th to 20th centuries, the details of which we discussed with you.

We would be grateful if you consider this suggestion and implement the change for the 1985 examination.

Thanking you,

Yours sincerely,

Sd/-
(Sister Elise)
Principal,
Sophia Girls College,
Ajmer.

HEAD,
DEPARTMENT OF ENGLISH

Urgent

Sept., 30, 1983.

The Dy. Registrar (Acad)
University of Rajasthan
Jaipur.

Dear Sir,

Mr. S.S. Mathur, Head of the English Deptt., Govt. College Kota has raised a very important matter which should be placed before the Board of Studies at its meeting tomorrow.

He wants a ruling on whether answers to questions in the M.A. (English) examination should be arranged essay wise or under sub-headings, with each sub-heading underlined.

Also he would like to know whether the critics whose opinions are used should be mentioned by name.

I should like the Convener with the approval of the Board to circulate to every paper-setter (through the University) the following rulings :

1. In the discipline of English literature we encourage the essay type of answer.
2. The candidates should not only name the critic/authority but also use quotation marks so that the answer does not give the impression of being plagiarized.

Thanking, you,

Your's faithfully,

Sd/-
(R.K. Kaul)
Professor and Head.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN ACCOUNTANCY AND BUSINESS STATISTICS
HELD ON 3RD/4TH OCT., 1983 IN THE
VICE-CHANCELLOR'S SECRE-
TARIAT, UNIVERSITY
COMPUS, JAIPUR.

Present :

1. Dr. K.S. Mathur (Chairman)
2. Dr. D.C. Jain
3. Dr. M.C. Khandelwal
4. Shri N.M. Kothari
5. Shri B.L. Verma
6. Shri R.K. Ranga (attended on 3-10-83 only)

Note :—Since Shri I.P. Bhatnagar, Convener, of the Board was not present, Dr. K.S. Mathur was requested to preside over the meeting.

1. The Board considered scrutinizing the statement of qualifications and teaching experience etc. of the teachers received from the University Teaching Departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners and for preparing panel of examiners in terms of clause (2) (a) of Statute 25 of the University Hand-Book Part II.

Resolved to recommend that the review committee be requested to prepare and finalise the panel and it be taken as accepted for appointment of examiners.

2. The Board could not consider question papers set for the various examinations of 1984 and the reports of examiners as the same were not placed before the Board.

3. The Board considered the scheme submitted by the committee appointed by the Faculty of Commerce vide its Res. No. 7 dated 24th April, 1982 for the revision of Degree courses in commerce and resolved to recommend that the scheme as outlined be not accepted and status-quo be maintained.

4. The Board recommended the courses of study and textbooks in the subjects for the following examinations together with the relevant additions and/or alterations to the regulations and ordinances as under :—

1. Degree Examination :

(a) First Year T.D.C. (Pass Course) Examination, 1986.

- (i) *Book-keeping* : Under "books recommended" *add* as item no. 3 "Book-keeping by Gupta, Jain, Gupta, Ramesh Book Depot, Jaipur."
- (ii) *Financial Accounting* : Under books recommended *delete* item No. 1 and renumber the remaining items.

(b) Second Year T.D.C. (Pass Course) Examination, 1986.

(i) *Paper I—Financial and Cost Accounts* :—

Delete the words "Methods of Costing—distinction between the various methods of costing." (ii) *delete* item No. 1 under books recommended and re-arrange the remaining items.

(ii) *Paper II—Statistical Methods* :

Under books recommended *delete* item No 3 and *add* सॉन्धिकीय विदियां by K.B. Goyal, Ajmera Book Company and rearrange the remaining items.

(iii) *Optional subjects* :*Costing and Quantitative Methods* :

Under "books recommended" *delete* item No. 8 and re-arrange the remaining items.

(c) Third Year T.D.C. (Pass Course) Examination, 1986 :

(i) *Paper I—Income Tax Law and Accounts* :

Under books recommended, *add* the following as item Nos. 5, 6, and 7 :—

5. Income Tax by Bhattacharya.
6. Income Tax by B.B. Lall.
7. Income Tax by Gupta, Gupta, Modi.

(ii) *Paper II—Auditing* :

Under 'books recommended' *delete* item No. 1 and re-arrange the remaining items.

(iii) *Additional optional Papers* :

Paper-Stores Control : under item (f) *delete* the words "Spoillogy" and "to" before wastage and under item (g) 'to' between "Reporting" and "Management".

2. Post-Graduate Examinations :

(a) M.Com. (Prev.) Exam., 1986

(b) M.Com. (Final) Exam., 1987

(i) *Paper I—Management Accounting and Financial Control :*

Under books for reference *add* the following books as item nos. 11, 12 and 13 :—

11. Management Accounting by S.N. Maheshwari.

12. Management Accounting by Bahadur Murao.

13. Management Accounting by S.B. Choudhary.

(ii) *Paper II—Business Statistics :*

Under books recommended, *add* Fundamentals of Statistics by D.N. Elhance. Kitabmahal, Allahabad “as item No. 6.”

(iii) *Paper III—Higher Accounting :*

Under books recommended, *delete* item Nos. 7 and 8.

(iv) *Paper IV—Cost Accounting and cost Control :*

Under books for reference *add* cost accounting by B.M.L. Nigam as item No. 19.

(v) *Paper V—Taxation Law and Practice :*

Same as recommended in syllabus for 1985.

(vi) *Paper VI—Managerial Economics and Management :*

Under books recommended, *add* as item No. 24 “Managerial Economics by Jhingan.”

Optional Papers :

(vii) *Paper I—Management and Operational Audit :*

Under books recommended *delete* item No. 5.

(viii) *Paper IV—Operational Research and Quantitative Techniques :*

Read the title ‘RERT’ as ‘PERT’

(ix) *Paper VI—Advanced Costing Problems :*

Under books recommended, *add* as item No. 7 “Advanced Costing Problems by Oswal, Shrivastava and Bidawat.”

3. **B. Com. Hons. (Two Year Scheme) :**
No change.
4. **P.G. Diploma in D.C.W.A. Pt. I, II and III, 1986, 1987 & 1988 respectively.**
No change.
5. **M.Phil Examination, 1986 :**
No Change.

5. The Board noted the contents regarding translation of the syllabus into Hindi in order to get the same printed in English as well as in Hindi.

6. *The Board considered* a letter No. F. 3-29/80 (CP) II dated 10th Feb , 1982 from the Secretary, U.G.C., New Delhi and resolved to recommend that the syllabus of H.I.C.C. be revised by the concerned Board of Studies/Faculty and the salient features given in the letter be incorporated in it.

The meeting ended with a vote of thanks to the Chair

Sd/-
K. S. Mathur
Chairman.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN ECONOMIC ADMINISTRATION AND FINANCIAL
MANAGEMENT HELD ON OCTOBER. 4. 5. 6, 1983
AND MARCH. 3. 4, 1984 IN THE VICE-
CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS,
JAIPUR

Present :

1. Dr. Om Prakash (on all days)
2. Dr. R.L. Varshney (on 3-3-84)
3. Shri K.K. Mehrishi (Special invitee on 4-10-83, 5-10-83
6-10-83 and 4-3-84)
4. Shri P.N. Mathur (on all days)
5. Dr. N.K. Sharma (on 4-10-83 and 5-10-83)
6. Dr. B.P. Sharma (on all days)
7. Shri M.L. Verma (on all days)
8. Shri B.L. Natiya (On 4-10-83, 5-10-83 & 6-10-83)
9. Shri S.M. Sharma (Vice-Principal, UCO Bank
Staff Training College as special
invitee on 4-3-84.)

1. Under sub-section (8) of Section 24-E of the University Act, Dr. Om Prakash, University Professor and Head of the Department of Economic Administration and Financial Management, University of Rajasthan, was appointed the Convener of the Board of Studies.

2. Under clause (iv) of Sub-section (4) of Section 34 of the University Act, Dr. B.P. Sharma, Principal, Government College, Dholpur, was elected as the member (other than the Convener of the Board of Studies) to serve on the Committee for Selection of Examiners in the subject for the year 1984.

3. The following Sub-Committee was appointed to scrutinise the statements of qualifications and teaching experience of teachers belonging to the University teaching department/University Colleges, Affiliated Institutions and other Universities :—

- (i) Dr. B.P. Sharma—(Convener)
- (ii) Shri M.L. Verma
- (iii) Shri B.L. Natiya

4. A few reports of examiners, placed before the Board, were perused. However, most of the other reports and question papers were not available for offering comments.

5. It was resolved that Courses for M.Com. (Economic Administration) M.Com. (Financial Management), and M.Com. (Cooperation) be repeated with the following additions/alterations :—

- (i) Add “Cooperative Thought and Rural Development” (Syllabus as per *Appendix-A*) in place of the paper on Essays and Comments (which had earlier been inserted in lieu of Viva-Voce).
- (ii) The Paper ‘Cooperative Thought and Legal Framework’ (V of Cooperation Group) may be replaced by the paper ‘Cooperative Law and Institutions’ (Syllabus as per *Appendix-B*).
- (iii) The Paper ‘Cooperative Environment and Rural Development’ (VI of Cooperation Group) be replaced by the paper ‘Cooperation and Agricultural Organisation’ (Existing paper VIII of Economic Administration Group)
- (iv) The Paper ‘Quantitative Techniques’ already introduced in Cooperation Group may be put at Serial No. XI—(Common with Paper XI of Economic Administration Group, as also paper XI of Financial Management Group)
- (v) In place of the Paper ‘Cooperation and Agricultural Organisation’ (existing paper VIII of Economic Administration Group, now proposed to be transferred as paper VI of Cooperation Group) a paper on ‘Incomes Policy’ (as per *Appendix-C*) be introduced as Paper VIII of the Economic Administration Group.
- (vi) The contents of the existing paper V (Monetary Policy) and paper VII (Management of Banking Institutions) of the Financial Management group, may be integrated into a paper entitled “Management of Banking Institutions and Monetary Policy” (as per *Appendix-D*) and put as Paper VII of the Financial Management Group while, in place of the existing Paper V, a paper on the “Business Budgeting” (as per *Appendix-E*) be introduced in the Financial Management Group.

6. It was resolved, that a Post-graduate Diploma Course in “Foreign Trade Management” (taking benefit of the advice emanating from Dr. R.L. Varshney, Deputy Director--General of the Indian Institute of Foreign Trade, now an external expert on this Board) be added (as per *Appendix-F*) to the existing job-oriented courses (started in 1982 at the instance of the Planning Commission, Govt. of India). On similar lines, its requirements may be as follows (each paper being of three hours duration carrying 100 marks) :—

(i) Paper I—International Trade Theory.

(ii) Paper II—Export Promotion Strategy and Institutions

- (iii) Paper III—Export Finance, Insurance and Shipping
- (iv) Paper IV—Import and Export Procedures in India.
- (v) Study Paper of about 5,000 words based on six weeks practical training indicating the candidate's own experience with regard to the establishment/project approved for the purpose by the Head of the Department. The candidate's study paper, along with the certificates from the supervisor/teacher and the organisation concerned will be required to be submitted within two months of the last date of the written examination. It will be assessed by One external and One internal examiner with equal status for both.

7. Resolved that the existing provision regarding Study Paper be modified as per resolution No. 6 (v) above for the three existing Job-oriented Post-graduate Courses also, viz., (i) Management of Small Scale and Agro-Industries, (ii) Project Planning and Infrastructure Management, and (iii) Development and Investment Banking.

8. Resolved that the existing Job-oriented P.G. Diploma Course in 'Development & Investment Banking' be renamed as 'Financial Management (as per Appendix-G).

9. Resolved that the P.G. Diploma course on 'Banking and Finance' (started in 1970) be renamed as P.G. Diploma Course in 'Banking Management' (as per Appendix-H).

10. The Board considered the recommendations of the Special Committee (appointed by the Faculty of Commerce vide its Resolution No. 7 dated 24th April, 1982 at the instance of Shri H.C. Rara) as made on September 1, 1983 (followed by deliberations of the Sub-Committee). In the light of the Sub-Committee deliberations, the Board drew up the *revised courses* for the B.Com. Three Year Degree (Pass Course) as per *Appendix-I*.

11. Regarding the existing P.G. Diploma in Cooperation (Started in 1972) it was clarified that every candidate shall be required to submit a monograph on an approved title relating to the field of the Cooperation. The monograph shall be of 100 marks to be assessed by two external examiners (with equal weight). Every candidate shall be required to offer the following six (five compulsory and one optional) papers (each paper of three hours duration carrying 100 marks) :—

Compulsory papers :

1. Theory and Practice of Cooperation.
2. Cooperative Law and Management.
3. Money and Banking.
4. Cooperative Accounting and Auditing.
5. Economics.

Optional papers :

6. Any one of the following :-

- (a) Cooperative Credit.
- (b) Industrial and Consumer's Cooperatives in India.
- (c) Cooperative Processing and Marketing.

N.B.—This is the existing position in operation since 1972. The clarification has become necessary because of a misprint in some edition of the Syllabus.

12. *Resolved to recommend* that the provisions regarding the monograph for the existing P.G. Diploma Course in Banking and Finance be the same as recommended in Resolution No. 11 above with the modification that the approved title shall be 'relating to the field of Banking and Finance.

13. There was inconclusive discussion on the pattern of examination reform as suggested in letter No. F. 3-29/00 (C.P.) II dated 10-2-1982 from the Secretary, U.G.C.

14. *Resolved to recommend* that History of Indian Culture and Civilisation be deleted from the list of subjects within the compulsory for B.Com. students.

The meeting ended with vote of thanks to the Chair.

Sd/-
(Om Prakash)
Convener.

APPENDIX-A

(Ref. Res. No. 5 (i) of the Minutes)

M.Com. (E.A.F.M.) (in place of Viva-Voce).

Paper V-Compulsory group—Co-operative Thought and Rural Dev.

Section-A :

1. *Philosophy of Co-operation:* General aims; basic principles; co-operation Vs. Capitalism, socialism and socio-economic systems.
2. *Origin and Development of cooperative thought in the West :* Robert Owens' role; Rochdale pioneers and the Christian socialists; Principles and characteristics of Raiffeisen societies and Schulze Delitzsch societies.
3. *Growth of cooperative thought in India:* Kautilya's Arthshastra and village communes in accient India; Pioneers of modern Indian Cooperative Movement and their Philosophy: the prevalent cooperative practices in Indian villages.
4. *Co-operative thought and legal framework:* Basic features of cooperative legislations of 1904 and 1912 and the Rajasthan State Co-operative Societies Act; Main findings of the Committee on Cooperative Laws (S.T. Raja Committee): Co-operative Banks Vs. the Banking Regulation Act and the Deposit Insurance Act.
5. *Co-operative thought and the State:* A resume of the State policy; Co-operation and the Industrial Policy; Co-operative Sector; Co-operation and the Plan Strategy; Co-operation and the R.B.I.; Control mechanism and incentives to cooperative sector, cooperation and S.B.I.
6. *Co-operative thought and the present trends of management in Cooperative sector :*
Need for professional management: cooperative education and training of members and employees cadrement. de-officialisation and de-politicisation.
7. *Co-operative thought and the masses:* Government Vs. mass movement, apex organisations in the various fields (Credit, Marketing and Consumer Cooperatives); suggestions for making cooperation a mass movement.

Section-B : Rural development.

1. *Rural Economy of India:* Features. Rural Development and Programmes; Plan Strategy, Provision of Licensing Policy regarding rural development: Agriculture & Allied Activities.

2. *Rural Population and Labour:* Rural Poverty, Unemployment and Rural Industries, Rural Employment Promotion Programmes.
3. *Rural development and sources of funds:* Quantum of Resources needed, Plan Allocations; Cooperative Credit Societies, Regional Rural Banks, Commercial Banks, the R.B.I., S.B.I.
4. *Agencies for rural development:* District Rural Development Agencies; Co-operative Housing Financing Societies, Rural Electrification Corporation, NABARD, Voluntary Agencies for Rural development, AVARD.
5. *Special schemes and programmes of rural development :* Antyodaya, Food for Work, TRYSEM, N-REP, IRDP, Dairy Development Programme, Desert Development Programme, S.F.D.A., MFDA, Rural Industrial Centres, Lead Bank Scheme, rural development and Industrial Estates, Drought Prone Area Programme, Rural Landless and Employment Guarantee Programme.
6. Rural development and the Panchayati Raj.
7. Problems of rural development and the prospect

References :

1. C.R. Fay : Co-operation at Home and Moroad.
2. H. Calvert : The law and Principles of Cooperation.
3. Warbasse : The Cooperative Way.
4. Kulkarni : Theory and Practice of Co-operation.
5. B.S. Mathur : Co-operation in India (Hindi edition).
6. Report of the Committee on Co-operation (Mirdha Committee)
7. Report of the Committee on Co-operative Administration.
8. Review of Co-operative movement in India (R.B.I. Publication).
9. Report of the working Group on Co-operatives, 1973 (National Co-operative Union).
10. Report of the Committee on Co-operative Marketing 1964--M.L. Dantwala.
11. Co-operative Societies Acts, 1904 and 1912.
12. The Rajasthan Co-operative Societies Act., 1965.
13. Report of the Committee on Co-operative Movement in the Rajasthan (Shobharam Committee) 1976.
14. T.N. Hajela : Principles, Problems of Practice of Cooperation

APPENDIX-B

(*Ref. Res. No. 5 (ii) of the Minutes*)

M. Com Previous and Final Examination in Economic Administration and Financial Management :-

CO-OPERATION GROUP

Paper VI. CO-OPERATIVE LAW AND INSTITUTIONS

M.M. 100

3 Hours duration

1. Cooperative Legislation in India : Historical Development of Legislation. Cooperative Societies Acts of 1904 and 1912 as amended upto-date.
2. Main Findings of Committee on Cooperative Law, 1956, (S.T. Raja Committee).
3. Cooperative Legislation in Rajasthan : A detailed study of the Rajasthan Cooperative Societies Act, 1965 as amended upto-date.
Note :—Questions on the above topics be asked on legal cases decided by the Supreme Court and/or High Courts in India.
4. Banking Regulation Act, 1949 as applied to Cooperative banks.
5. A brief study of the following Institutions :—
 - (i) National Cooperative Consumers Federation (NCCF)
 - (ii) National Cooperative Development Corporation (NCDC)
 - (iii) National Cooperative Union of India (NCUI)
 - (iv) Indian Farmers Fertilizers Cooperative (IFFCO)
 - (v) National Cooperative Union of Members Education, New Delhi.
 - (vi) National Agricultural Cooperative Marketing Federation (NAFFD).
 - (vii) National Institute of Cooperative Management (Vaikunthal Mehta Institute, Pune) VMNICM.
 - (viii) National Cooperative Dairy Federation of India
 - (ix) National Federation of Industrial Cooperatives (NFIC)
 - (x) Rajasthan State Cooperative Union (RSCU).
 - (xi) Rajasthan State Cooperative Bank (Apex Bank)
 - (xiii) National Agricultural Cooperative Marketing Federation (NACMFED).
 - (xiv) NABARD.

References :

1. Co-operative Societies Act, 1904.
2. Co-operative Societies Act, 1912 as amended upto-date.
3. Rajasthan Co-operative Societies Act, 1965 as amended upto-date.
4. Report of the Committee on Co-operation (Mirdha Committee)
5. Committee on Cooperative Law (S.T. Raja Committee)
6. Report of the Committee on Co-operative Administration, 1963
7. Co-operative Law in India : M.D. Vidwans.
8. Annual Reports of the Specific Institutions.
9. S.R. Bhansali, Commentary on the Rajasthan Co-operative Societies Act, 1965 (1981).

APPENDIX-C

(*Ref. Res. Na. 5 (v) of the Minutes*)

M.Com. (Economic Administration)

In Place of the Existing paper VIII (Cooperation and Agricultural Organisation—transferred to Cooperation Group).

Paper-VIII (INCOMES POLICY)

100 Marks

3 Hours duration.

1. *The Concept of Income:* Accounting Income and Economic Income, Money Income and Real Income. Earned Income, and Unearned Income, Personal Income and National Income Gross Income and Net Income, Commercial Profit & Social Profit, Free Income and Frozen Income, Consumption and Saving Investment and Capital Gain.
2. *The Need and Bases of Guided Incomes Policy:* Social and Economic Justice, Directive Principles of the Indian Constitution. Reward or Penalty as Deserved, Merit, Effort, Performance, and Need. Equality and Liberty; Marxian, Nozickian and Rawlsian Approaches, *Karma*/Desert Theory; Gandhian/Trusteeship Theory, Pareto Efficient/Welfare of Theory and Relativity theory.
3. *Control of Economic Power:* Limits to Economic Freedom. The Role of the State and Anarchy; Control and of Monopoly Private and Public Ceiling on Income and Wealth, Equality of Economic Opportunity and the Role of Education; Rationing of Employment, Age-specific, Need-specific and work-specific Equality, Position of Women and Children in the Employment Market, Land and other Private Property; Inheritance System.
4. *Perspectives* Socio-economic Change Techno-managerial Change, Institutions & Infrastructure Changes Human Resource Changes Education, Employment. Wage Policy and Income, Differentials attributable to occupation, colour Sex etc. Nature of Income Distribution in the U.K., Sweden, U.S.S.R. China, Japan, Australia, Brazil, U.S.A., Mexico and Nageria (only outline to be expected, with choice between at least two countries in a question).
5. *Practices:* Nature of Income Distribution (Inter-State and Intra-State) in India, Nature of Income Policies, Tools and Techniques of Incomes Policies, Impact of Price Changes and Indexation Approach; Relativity Model & its Feasibility; Collective Bargaining and Productivity Agreements; Freezing of Wages, Profits/Dividends, and other Incomes; Voluntary

Restraint, Conventionalism and Ultra-modernism; Pay-Commissions and National wage Policy; Incomes Policy, Industrial Relation and Human Welfare with special reference to India.

References :

1. LORD DIAMOND : Reports of the Royal Commission on the Distribution of Income and Wealth.
2. JOHN ARTHUR & WILLISM H. SHAW: Justice and Economic Distribution (Edited Volume)
3. ROBERT NOZICK: Anarchy State and Utopia.
4. JOHN RAWLS : A Theory of Justice
5. F.A. HAYEK : The Constitution of Liberty.
6. HENERY PHELPS BROWN : The Inequality of Pay.
7. A.B. ATKINSON : The Economics of Inequality.
8. JAN TINBERGEN : Income Distribution, Analysis and Policies.
9. KOICHI MERA : Income Distribution and Regional Development.
10. BHOOTALINGAM REPORT ON Wages, Income & Prices (India).
11. AJIT KUMAR SINGH : PATTERNS OF Regional Development
12. R. SINHA & OTHERS : Income Distribution in India.
13. MAURICE DOBB : Welfare Economics and the Economics of Socialism.
14. J.E. MEADE : The Just Economy.
15. DANDEKAR & RATH : Poverty in India
16. DAVID MORAWETZ : Twenty Five Yezars of Economic Development (world Bank).
17. Current Literature.

APPENDIX-D

(*Ref. Res. No. 5 (vi) of the Minutes*)

M.Com. (Financial Management)

Paper VII—MANAGEMENT OF BANKING INSTITUTIONS
AND MONETARY POLICY :

A. Management of Banking Institutions :

1. *Principles:* Communication, Leadership, Motivation and Human Relations, Employee Dissatisfaction, Strikes, Work-to-Rule Campaigns, Overtime and Fringe Benefits, Unit costs Morale of Bank Employees, their Productivity and Efficiency.
2. *Personnel Management:* Problems of Recruitment, Training Promotion. Placement and Punishment.
3. *Financial Viability:* Bank Liquidity and Profits; Management of Bank Assets and Liabilities; Portfolio Policy.
4. *Role of State:* Banking Regulation: Social Control and the Nationalisation; Management of Nationalised Commercial Banks, Rural Banking Institutions. (with special reference to Rajasthan), Reserve Bank of India and State Bank of India.

B. Monetary Policy :

1. *Monetary Theory:* Money and Price Mechanism; the Quantity Theory, Keynesian and Monetarist Approaches; Saving, Investment, Multiplier and Accelerator; Rate of Interest; Theories of Fluctuations; Trade Cycles and recent development.
2. *Monetary Policy in India:* Efficacy and Limitations since 1951, inflation and Supply Elasticities; Selective Credit Controls, Deficit Financing, Open Market Operations; Fiscal Controls.
3. *International Money:* The Gold Standard Mechanism and its collapse, Reform of the I.M.F. System Specially since 1971, International Liquidity; S.D.R. Scheme and India, Dollar and Curriency Baskets; Impact of Devaluations on the Indian economy; Hot Money Flows, Terms of Trade between Rich and Poor Nations, as also between the Rural and Urban Sectors of the Indian Economy.

References :

1. EDWARD W. REED : Commercial Bank Management.
2. ROBINSON : The Management of Bank Funds.
3. B.M.L. NIGAM : Banking and Economic Growth.

4. H.C. SHARMA : ROLE of Banking in a Developing Economy.
5. VASVANI : INDIAN Banking.
6. D.D. and HESTER : Indian Banks, Their Portfolios, Profits and Policy.
7. V.R. DESAI : Banking Development in India.
8. PETER DRUCKER : Managing for Results.
9. J.M. KEYNES : The General Theory of Employment, Interest and Money.
10. G.N. HALM : Monetary Policy.
11. HARRY G. JOHNSON : Essays in Monetary Economics.
12. PAUL M. FORVITZ : Monetary Policy and the Financial Systems.
13. C.K. JOHRI : Monetary Policy in a Developing Economy.
14. V.C. SINHA : Maudrik Arthashastra.
15. HARISH C. SHARMA : Maudrik Arthashastra.
16. G.D.H. COLE : Dravya, Vyapar Aur Viniyog (1974)
17. MILTON & ROSE FRIEDMAN : Free to Choose (1980)

APPENDIX-E

(*Ref. Res. No. 5 (vi) of the Minutes*)

M.COM. (FINANCIAL MANAGEMENT)

Paper V-BUSINESS BUDGETING

1. *Budgeting* : Meaning. Origin and Significance: National Family and Business Budgets: Surplus Budget. Deficit Budget and Balanced Budget: Fixed and Flexible Budgets: Benefits of Budget and its Limitations in Public/Private Sector Institutions: Budget as an instrument of Cooperative/Corporate Planning: Framing of Government and Business Budgets; Budget Organisation. Budget Committee and Time Framework: Annual. Half-yearly. Quarterly. Monthly. Weekly and Daily Budgets.
2. *Operational Budgets*: Features of Sound Business Budgeting Sales Budget: Production Budget: Plant Utilisation Budget. Materials Budget: Labour Budget: Overheads Budget. Financial Budget: Detailed Study of various methods of preparing Cash Budgets; Practical Application of Flexible Budgeting; Master Budget. Human Resource Budgeting. Budgeting of Time and Other Scarce (Economics) Resources.
3. *Capital Budgeting*: Financial Planning and Capital Expenditure Decisions: Types of Investment and Gestation Period; Project Planning and Appraisal of Commercial viability : Capital expenditure and investment ranking techniques; Practical Application of Pay Back Average Rate of Return, and Discounted Cash Flow (Time-adjusted) Techniques; Present Value, Net Present Value Profitability Index. Benefit-Cost Ratio, Internal Rate of Return and Terminal Value Method: Capital Budgeting Under Uncertainty: Inflation, Deflation and Indexation Vis-a-vis Capital Budgeting.
4. *Performance Budgeting*: The concept, evolution and its applicability to Government and Business, with special reference to India. Steps in the preparation of Performance Budgets Follow-up Evaluation (including Concurrent Evaluation) and Monitoring: Information Management: Success and Limitations of Performance Budgeting in India with special focus on Banks, Financial Institutions and Public Enterprises Budgetary Control.
5. *Budgeting and Management Reports*: Budgeted Balance Sheet and Profit and Loss Account/Income Statement; Perspective Planning. Financial Forecasting and Investment Decisions; External Reporting for Security Markets. Government (Planners/Polymakers) and other Agencies. Preparation of various Performance. Reports for presentation to various

levels of Management, Timeliness, Reliability and Relevance of such Reports, and their Practical Formulation.

N.B.—The question paper will be evenly divided between (A) Theoretical Question; and (B) Numerical/Other Practical Questions.

References :

1. B.H. Sord and G.A. Welsch : Business Budgeting.
2. Glen A. Welsch : Budgeting, Profit Planning and Control.
3. J.B. Heckert and J.D. Wilson : Business Budgeting and Control.
4. Andrew C. Stedry : Budget Control & Cost Behaviour.
5. A. James Boniss : Capital Budgeting.
6. John J. Clark & Others : Capital Budgeting.
7. Jack Ra-bin (Ed.) : Handbook of Public Budgetary Control and Financial Management (H.P. Court: Budgetary Control).
8. S.K. Chakraborty : Financial Management and Control.
9. E. Solomon : The Theory of Financial Management.
10. Agrawal & Agrawal : Vittiya Prabandh.
11. R.S. Kulshreshtha : Nigamon Ka Vittiya Prabandh.

APPENDIX-F

(*Ref. Res. No. 6 of the Minutes*)POSTGRADUATE DIPLOMA IN FOREIGN TRADE
MANAGEMENT.

Paper I—International Trade Theory:

(Paper of 100 marks...Time 3 hours.)

Meaning and significance of International Trade as distinguished from Inter-regional and Internal Trade. Theories of International Trade; Mercantilism and the Classical Schools of Thought of Comparative Costs.

International Trade as a special case of general exchange, Recent developments in International Trade Theory; Terms of Trade and the gains from trade.

International Factor Movements: Labour and Capital movements, Foreign Aid Programmes, Price changes.

Theory of Protection. Quotas and Tariffs, Bilateralism in International Trade. Trade Policies, Customs Union, European, Common Market EPTA, LAFTA, GATT, UNCTAD. International Commodity Agreements.

Theories of Exchange Rate determination; Their relationship with International Trade; Balance of Indebtedness and Balance of Payments; Fixed and flexible Exchange Rates; Devaluation and Exchange Fluctuations in relation to International Trade; Foreign Exchange transactions, terminology and quotations; Exchange of Control (The study should be based on Indian background).

The International Monetary Fund, World Bank and its affiliates, Asian Development Bank, African Development Bank.

The Problem of International Liquidity, International Monetary reform, Current International Economic Problems, NIEO.

India's foreign trade and Commercial Policy since 1947, India's Balance of Payments—Recent Trends, Foreign Aid to India; Sources of Foreign Trade Statistics in India—Method of Collection with the special reference to coding System.

References :

1. Kindelberger: International Economics.
2. Ellsworth, P.T. : The International Economy.
3. Ellsworth, P.T. : International Economics.
4. Snider, Delbert A. : Introduction to International Economics
5. Ohlin Bertil : Inter-regional and International Trade.
6. Haberler, Gottfried : The Theory of International Trade
7. Tinbergen : International Economic Integration.

8. Myradal, Gunnar : An International Economy—Problems and Prospects.
9. Manmohan Singh : India's Export Prospects for Self-sustained growth.
10. Harrod, R.F. : International Economics.
11. Enke & Salera : International Economics.
12. Meade : Balance of Payments.
13. Thomas : Principles and Arithmetic of Foreign Exchange.
14. Gupta, K.R. : International Economics.
15. R.B.I. Reports on Currency and Finance.
16. Arora, R.S. : A Practical Guide to the Foreign Trade of India.
17. Einzing, Paul : The Theory of Foreign Exchange.
18. Einzig, Paul : Forward Exchange.
19. Walton : Foreign Trade and Foreign Exchange.
20. Killough & Killough : International Economics.
21. R.B.I. : Foreign Exchange Manual.
22. Bhagwati : International Trade (Penguin).

Paper II—Export Promotion Strategy and Institutions :

- A. (i) Meaning, Significance and Role of Institutions engaged in Export Promotion Strategy. Different problems and their solutions.
- (ii) Critical study of the following institutions :
1. Export-Import Bank of India,
 2. Export-Credit and Guarantee Corporation of India
 3. State Trading Organisation of India.
- B. Brief study of the following export promotional Institutions :
1. Central Trade Advisory Council.
 2. Trade Development Authority;
 3. Indian Institute of Foreign Trade;
 4. Indian Institute of Packaging;
 5. Export Inspection Council,
 6. Indian Council of Arbitration;
 7. Trade Fair Authority of India;
 8. The Federation of Indian Export Organisations;
 9. India Investment Centre.
- C. Export Processing Zone : Free Trade Zone—Kandla.
- D. Commodity Boards.
- (1) Minerals and Metals Trading Corporation.
 - (2) Marine-Product Export Development Authority.
 - (3) Handicraft and Handlooms Export Promotion Corporation.

- (4) Indian Motion Pictures Export Promotion Corporation.
- (5) State Chemical and Pharmaceutical Corporation of India.
- (6) Casheo Corporation of India.

E. Export-Incentives given to Indian Exporters.

References :

1. Annual and other REPORTS of Concerned organisations.
2. FOREIGN TRADE REVIEW AND REPORTS : Published by the Indian Institute of Foreign trade. New Delhi.
3. GOVERNMENT OF INDIA. Policy Announcements and REPORTS of Concerned Ministres.

Paper III. Export Finance, Insurance & Shipping.

Part A.

1. *Export Finance* : Need, Importance & Problems of Export Finance, Methods of International Payments, Short-term and Long-term Finance for Export, Accepting & Discounting of Bills, The role of Discounting and Accepting Houses, Documentary Credit.
2. *The Role of Banks in Foreign Trade* : Drafts, Mail and Telegraphic Payment Orders. Collection of Bills of Exchange—both Clean and Documentary, Letter of Credit, Detailed knowledge of uniform customs and practice for documentary credit, The Role of EXIM Bank; International Institutions in Financing of Export-Import Trade, Role of EXIM Banks of Japan & U.S.A., The London & New York Money Markets—Features & Characteristics. The EURO-Currency Market, Problems of International Liquidity and Monetary Reforms.
3. *International Transactions* : Payments determination of Rate of Exchange, Foreign Exchange Transactions. Terminology, Quotations and Forward Exchange.

Part B

4. *Shipping* : Its role in export, Shipping in India & abroad. Development of Inland Water Transport and Shipping, Combinations in Shipping, Ocean Freight Rates, Development of India's Shipping after Independence, Causes of slow growth of Shipping in India, Study of India's major ports, concept of Dry Port.

5. *Insurance* : Risk in International Trade Cargo, Risk, Credit Risk, Exchange Fluctuation Risk, Protection against Risk in Export, Insurance of Exporter's Credits. The Export Credit and Guarantee Schemes in India, Japan & U.K., Role of ECGC of India in promoting Indian exports, Protection against political and economic risks.

References :

1. Verghese, S.K. Foreign Exchange and Financing & Foreign Trade.
2. Institute of Bankers London—Finance of International Trade.
3. Paul Einzig—Euro-Dollar System.
4. Walton. L.E. Foreign Trade and Foreign Exchange.
5. Firtz Machlup—International Monetary Economics.
6. Radha Kunud Mukarjee—Indian Shipping.
7. Reports of Committees on Railways, Road, Water and All Transport in India.

Paper IV—Import & Export Procedures in India :

1. *Foreign Trade Control Regulations in India* : The Foreign Exchange Regulations Act, 1947 : The Foreign Exchange Manual of the REI, Import Trade Control Policy, Authorised Dealers; Circulars of the Exchange Control Department of the REI, Rules of the Foreign Exchange Dealers Association of India, and Trade Control in India.
2. *Documents used in Foreign Trade*: Bill of Lading; Types of B/L Airway Bill, Marine Insurance Policy Losses; Covered Bill of Exchange; Commercial Invoice, Consular Invoice, Certificate of Origin, Inspection Certificate, Packing Trust Receipt Procedure and Customs formalities at Sea & Air Transport.
3. *Foreign Trade Organisation* : The Ministry of Foreign Trade : The Controller of Foreign Exchange, Exchange Control offices and Cells, The Customs Department, The RBI, the authorised dealers and the authorised money changers.
4. *Import Trade Control Regulations in General* : Trade and personal (Private) Imports, Categories of Importers Actual Users; Established Importers, Registered Exporters, Capital Goods Importers and Heavy Electrical Plants Importers, Authorities for issue of import licences

and procedure for imports under various licences—cash Import Licence, Deferred Payment Import Licence, Licences under Foreign Aid Programmes and open General Licences. Procedure for imports by post parcel, Procedure for imports from Nepal and Bhutan. Duplicate Import Licences, Clearance of goods by the customs authorities, banned imports and imports under penalty.

5. *Export: Trade Control Regulations in general* : Banned exports, export houses, assistance and concessions to exporters, Procedure for Exports—cash exports, Rupee agreements, bilateral agreements, gifts etc. Preshipment and postshipment inspection, quality control, clearance of goods, deposit of foreign currency, punishment for violation of rules.
6. Facilities available at various sea and air ports, tariff and non-tariff barriers.

References :

1. The Foreign Exchange Regulation Act, 1947.
2. The Exchange Control Manual of the RBI.
3. Authorised Dealers Circulars of the Exchange Control Department of the RBI.
4. Import Trade Control Policy Hand-Book of Rules & Procedures.
5. Rules of the Foreign Exchange Dealers Association of India.
6. Uniform Customs and Practices for Documentary Credit—International Chambers of Commerce.

APPENDIX-G

(Ref. Res. No. 8 of the Minutes)

POST-GRADUATE DIPLOMA IN FINANCIAL MANAGEMENT

I. Principles of Financial Management :

1. Role of finance in Business, Objectives. Organisational behaviour, finance functions.
2. Financial Planning & Capital Structure.
3. Sources of funds : long-term sources, medium term sources; short-term sources.
A brief study of IDBI, IFCI, ICICI, Unit Trust, L.I.C., SFCS, R.F.C. and RIICO.
4. Tools of financial Management :
Ratio analysis. Funds Flow Analysis. Break-even analysis.
5. Management of Income:—Profit Planning: Dividend and retention policies.
6. Recent trends in Financial Management in Public sector with special reference to India.
7. Institutional Finance to Small Scale Industries: Commercial Banks, S.B.I., Credit Guarantee Scheme of R.B.I.. Difficulties and suggestions for their removal.

Books Recommended :

1. Hamption—Financial Management.
2. Solomon and Pringle—An Introduction to Financial Management.
3. Van Horne—Financial Management and Policy.
4. R.S. Kulshrestha : Nigam Ka Vittiya Prabandh.
5. M.D. Agarwal & N.P. Agarwal : Vittiya Prabandh (Ramesh Book Depot.).
6. Annual Reports of IDBI, IFCI, ICICI, Unit Trust of India, L.I.C. etc.
7. Tandon Committee Report.
8. Pandey, I.M. : Financial Management.
9. Pareek, H.S. : Financing of Small Scale Industries.
10. Kuchhal, S.C. : Financial Management.

II. Security Analysis & Investment Management :

- (a) Co-oprate securities :—Meaning, Kinds of securities, Analysis of securities for investment purposes, Cost of

investment in securities, cost of marketing, Forecasting Techniques, Role of Stock Exchange. Commercial Banks, L.I.C. and Unit Trust of India's developing capital market.

(B) Investment Management :

- (i) Modern concept of investment management: Role, Functions and objectives of investment management; various risks in investment (Business, financial, market); Banking institutions and securities.
- (ii) Securities : Analysis. underwriting, distribution and other services, sources of funds; Tools of investment management. Development Banking in India, Recent trends in investment management in India.
- (iii) Portfolio Management : Needs, objectives and policies of portfolio management; Theory of portfolio management and timing: Port-folio-evaluation; analysis of published accounts and valuation of shares.
- (iv) Investment Accounts : Accounting Techniques of Investment Banking Institutions.

Books Recommended :

1. Graham and Dodd : Security Analysis.
2. R.R. Gupta : Published Accounts.
3. Nadda, N.L. : Capital Market in India.
4. Gupta, B.L. : Working of Stock Exchange in India.
5. Johnson, T.E. : Investment Principles.
6. Annual Report of Various Stock Exchanges in India.
7. Rik, M.S. : Stock Market Economics.
8. Timothy E. Johnson : Investment Principles.
9. Edwara E. Williams : Investment Analysis, M. Chapman Findley III.
10. Frederick Amling : Investment—An Introduction, Analysis and Management.
11. Donald E. Vaughn : Survey of Investments.
12. Charles P. Bones : Essentials of Modern Investments
Donald L. Tuttle
Coerrill P. Heaton
13. James T.S. Porterfield : Investment Decisions and Capital Costs.
14. Mehta, R.C. Capital Market in India for Planned Growth.

III. Management of Working Capital and Inventory Decision :

- (a) Concept of working capital; Need for working capital; Permanent & Variable working capital; and Determinants of working capital.
- (b) Dimensions of working capital management; optimum level of current assets; Liquidity v/s profitability; sources of working capital finance (a) Bank sources (b) Non-Banking sources;
Analysis of working capital—schedule of working capital changes; ratio analysis; funds statement, effects of inflation on working capital management.
- (c) Inventory management—Need & Objectives of inventory management;
Techniques of inventory management, E.O.Q. analysis, R.O.P. analysis, A.B.C. analysis, Selective inventory controls.
- (d) Management of receivables and payables, credit policy and its objectives, credit terms, collection policy; Ageing schedule;
Average collection period (Debtors/Creditors Ratio).
- (e) Liquidity & Management of cash; Role of liquidity in business; Motives for holding cash; cash planning; cash budgeting; Management of cash flows, determining the level of cash, controlling disbursement, Investment of surplus cash.

Books Recommended :

1. Pandey, I.M. : Financial Management.
2. Srivastava, R.M. : Financial Management.
3. Kuchhal, S.C. : Financial Management.
4. एम. डी. अग्रवाल व एन. पी. अग्रवाल : वित्तीय प्रबन्ध—रमेश ब्रुक डिपो, जयपुर
5. आर. एस. कुलश्रेष्ठ : निगमों का वित्तीय प्रबन्ध ।
6. पोरवाल, बी. एल. : सामग्री प्रबन्ध, रमेश ब्रुक डिपो, जयपुर ।
7. Chadda R.S. : Inventory Management in India.
8. Gokaran P.R. : Essentials of Materials Management.
9. Lee and Dabler : Purchasing and Materials Management.
10. M.Y. Khan & P. K. Jain : Financial Management.
11. Tandon Committee Report.
12. COPU (Lok Sabha) : Reports on Materials Management.

IV. Project Appraisal and Investment Decision :

(a) Project Planning and Appraisal :

1. Project formulation—Meaning of a Project, its objectives, identification, and classification.

2. Techniques of project formulation, appraisal and implementation, PERT & CPM Techniques.
3. Project Appraisal : Feasibility Study; Techno-Economic Analysis.
4. Project Appraisal : Commercial Profitability and Social Cost—Benefit Analysis.
5. Role of Financial Institutions in Project Financing.

(b) Investment Decision and Capital Budgeting :

Management of investment in fixed assets; Techniques of capital expenditure decisions. Urgency method; Pay back period method, Unadjusted return on investment; discounted cash flow method, Time adjusted return on investment Present value method; Internal rate of return; *Cost of capital* : cost of equity capital & retained earnings. Cost of preference capital & borrowed capital, Weighted and average cost of capital, Performance Budgeting.

Books Recommended :

1. Matloo, P.K. : Project Formulation in Developing Countries.
2. Halfert, E.A. : Techniques of Financial Analysis.
3. United Nations : Guidelines for project Evaluation.
4. David, S. Clifton: Project Feasibility Analysis Oavid. E. Fyffe.
5. Soumelis, C.G. : Project Evaluation Methodologies and Techniques.
6. United Nations : Evaluation of Industrial Projects.
7. Scott. Mac. Arthur, : New Bery. Project Appraisal
8. Lal, D. Methods of Project Analysis.
9. Arnold, C. and Atur : Benefit-Cost Analysis.
10. UNIDO : Guide to Practical Project Appraisal—Social Benefit Cost-Analysis in Developing Countries.
11. Lock, D. : Project Management with CPM and PERT
12. Madir, J.J. and Philips, C.R. : Project Management with CPM and PERT.
13. James T.S. Porterfield : Investment Decisions and Capital Costs.
14. I.M.D. LITTLE & J.A. MIRRLEES : Project Appraisal and Planning for Developing Countries.
15. D.K. Jain : Project Planning and Appraisal in Planned Economy-The Indian Context.

V. Study Paper :

Study paper of about 5000 words based on six weeks practical training indicating the candidates own experience with regard to the establishment/Project approved for the purpose by the Head of the Department. The Candidate's study paper will be required to be submitted within two months of the last theory examination and will be assessed by one external examiner and one internal examiner (with equal weight).

N.B. : The provisions regarding eligibility for admission, division etc. will be the same as for the existing Job-oriented P.G. Diploma Course in "Development and Investment Banking."

APPENDIX-H

(*Ref Res. No. 9 of the Minutes*)

POST-GRADUATE DIPLOMA IN BANK MANAGEMENT

Paper I—Financial Accounting :

1. Principles of Book-keeping; Single and double entry systems of accounting; Cash Book: Journal. Ledger and Trial Balance and Final Accounts: Reconciliation of accounts;
2. Various Statements and Returns statutorily required by the Reserve Bank of India and Statutory provisions regarding preparation and display of Final Accounts: Balancing of Books;
3. Frauds: causes: usual area of frauds and detection of frauds; measures to check frauds;
4. Internal auditing: audit of cash and trade transactions; vouching and verification of assets;
5. Appointments: remuneration, duties, rights and responsibilities of bank auditors: statutory provisions regarding audit of bank accounts: duties and responsibilities of Management in respect of audit of bank accounts.

Books Recommended :

1. Brown, Harvard J. : Modern Bank Accounting and Auditing Forms : With Commentary.
2. Garcia F.L. : How to Analyse A Bank Statement
3. I.B.A. : Financial Analysis of Banks.
4. Jannott Paul F : The Effective Bank Supervisor.

Paper II—Financial Management :

1. Need for funds in modern business; working capital, importance and adequacy; profitability and solvency; ratio tests of working capital;
2. Sources of finance; loan equity ratio; loan Vs. equity and preferred stock;
3. Management of funds; inventory, cash, floating assets and fixed assets;
4. Capital budgeting and cost of capital; capital budget; composition; investment and return: payback test, profitability tests, cost of loan, preferred stock, equity and retained earnings.
5. Profit planning: Profit objectives: Income measurement, Analysis of projected earnings. Assessment of commercial feasibility of profits.

Books Recommended :

1. Pandey I.M. : Financial Management.
2. Kulkarni P.V. : Financial Management.
3. Hingorani & Chawla : Management Accounting.
4. Kulshresth N.L. : Management Accounting.
5. Kuchhal S.C. : Financial Management.
6. Mason John M. : Financial Management of Banks.
7. Nigam B. M. Lal : Financial Analysis Techniques for the Banking Decisions.
8. Pitcher M.A. : Management Accounting for the Lender-Banker.
9. Agarwal M.R. : Vittiya Prabandh.
10. Agarwal M.D. : Vittiya Prabandh.
11. Kulshresth R.S. : Nigamon Ka Vittiya Prabandh.

Paper III—Law and Practice of Banking :

- (1) Relationship between the Banker and Customer; Introduction of accounts and its legal implications; Practice in opening and conduct of accounts for the individual customers, Partnerships (registered and unregistered), Joint Stock Companies (Private and Public Ltd. Cos), Registered and Unregistered Clubs, Societies, Trusts, Hindu Undivided Families, Local Authorities; Executors, Administrators, Liquidators and Receivers;
- (2) Mandatory functions of the Banker; rights and duties of drawee banker and drawer, discounting of bills, safe custody, executor and trustee business miscellaneous, services rendered by a banker and clearing system;
- (3) Collection of cheques and other instruments; rights, duties and responsibilities of collecting banker, statutory protection; Payment of cheques and other instruments; rights, duties and responsibilities of paying banker; endorsement and crossing of cheques and other instruments, statutory protection in respect of forged endorsements.
- (4) Advances to customers; Pledge, hypothecation, mortgage and charge; a detailed knowledge of stocks and shares, land and building, plant and machinery, life policies, debentures, produce and goods, documents of titles to goods, standing crop, and documentation. Guarantee and indemnity and letters of credit;
- (5) A brief study of the following Acts : Banking companies Regulation Act (with latest amendments), Regional, Rural Banks Act, Indian Negotiable Instruments Act,

Exchange control Act, Foreign Exchange Regulation Act, and Deposit Insurance and Credit Guarantee corporation Act; A preliminary knowledge of the provisions of Indian Companies Act, R.B.I. Act, Indian Evidence Act, Indian Contract Act: Indian Limitations Act and Bankers Book Evidence Act as applicable to *banks*. The candidates are required to study some important cases in the field of banking with particular reference to elements of decision making in a Bank, Social obligations of a bank and social obligations of a borrower.

Books Recommended :

1. Sheldon H.P. : Law and Practice of Banking.
2. Davar S.R. : Law and Practice of Banking.
3. Tandon M.L. : Banking Law and practice.
4. Chaudhari B.K. : Practical Banking : Loans & Advances
5. Sharma H.C. : Banking Vidhi Evam Vyavahar.
6. Mali Ram & Sharma G.N. : Banking Vidhi Evam Vyavahar.

Paper IV—Management of Banks :

1. *Human Relations* : Basic Principles of Bank Management; characteristics of Bank Management as per ancient Indian thought; management of human resources communication, behavioural science, developement of leadership areas of motivation; conflict management/resolution, employee dissatisfaction.
2. *Levels of management* : under branch banking and unit banking, composition of boards of directors of public sector and private sector banks, powers of Reserve Bank; Organisation of Head/Regional/Zonal and Branch Offices classification and Categorisation of branches, control over branches, information system, general and performance budgeting.
- (3) (a) *Personnel management* :
Recruitment, training, placement, promotion, transfer and retrenchment; wage structure in different banks, wage incentives, fringe benefits and employees welfare; refresher courses and departmental examinations, award and non-award staff, cadrement of employees. delegation and decentralisation of authority, social obligations of bank workers, productivity of bank employees and trade unionism; overtime, strikes and grievance procedurer.
- (b) *Management and marketing of customer services* :
Areas of services, Bank services Vs. Indian Banks Association, Banks services and R.B.I. Customers and bank services (Consciousness).

- (4) (a) *Management of Bank Funds* : Cash, deposit, credit and investment management; appraisal of loan applications, projected balances sheet and Income statement; monitoring.

(b) *Management of various schemes and programmes*: DRI, LBS, CAS, 20-Point Programme, IRDP, SETUP, Trysem etc

Transactional analysis; Bank Management and the Government; Parapherlia for coordination; shortcomings of Indian Bank management and suggestions for its improvement; Role of NIBM in various facets of bank management.

Books Recommended :

1. Edward W. Reed : Commercial Bank Management
2. Rollend I Robinson : The Management of Bank Funds
3. Shrivastava R. Mohan : Management of Banks
4. Prakash R Others : Organisational Climate in Nationalised Banks.
5. Chatterjee A.K. : Management Techniques of Bank Leading.

Paper V—International Trade, Finance & Foreign Exchange Management :

1. Theories of International Trade. Principle theories problems of export and import trade, import and export procedures and practices; balance of trade and balance of payments; terms of trade and import/export policy, international liquidity.
2. *Export finance*: Sources; advising letters of credit; opening of letters of credit for import and export; confirmation of letters of credit; negotiation of bills under export letters of credit; packing credit (Preshipment and post-shipment) remittances: D/Ds Rs TTs; MTs; travellers cheques (Inward and outwards), exports on consignment basis.
3. *Trade Practices*: Problems of Over-invoicing and under-invoicing; State; Trading, Rupee Trade and Regional trading blocks; Uniform customs and practices, role of R.B.I. in financing foreign trade; export promotion schemes.
4. *Foreign exchange*: Concept of foreign exchange market, introduction to foreign exchange, mechanical of control of foreign exchange rates, rate of exchange; concept, types, fluctuations and methods, various bodies connec-

ted with foreign exchange, personal remittances, commercial operation forward contracts, non-resident accounts; incentives to non-resident accounts, entering into spot and forward contracts.

5. Practical Problems : Foreign exchange arethmetic; calculation of exchange rate.

Books Recommended :

1. Chaterjee A.K. : Fundamentals of Foreign Exchange.
2. Verghese : Fundamentals of Foreign Exchange
3. S.K. Verghese : Financing Foreign Trade (4 Volumes)
4. R.B.I. : Exchange Control : Non-resident Indians.
5. Chaterjee B.K. : Finance of Foreign Trade and Foreign Exchange.

Paper VI—Rural Banking :

1. *Concept*: basic concept, historical background, philosophy and need of rural banking in the Indian context, Lead Bank Scheme, DCP/AAP and various platforms created under L.B.S. Rural Banking and state patronage.
2. *Organisation*: Steering Committee on RRBs, identification of geographical areas, jurisdiction of RRBs, Role of sponsoring banks, capital participation branch expansion policy of R.B.I. Rural Banking and location of new centres.
3. (a) *Concessions*: concession to RRBs under various Acts, Refinancing facility by RBI, NABARD and the sponsoring banks.
(b) *Management* : Management of RRBs: Head Office as well as branches, control over branches, cash management, personnel policy of RRBs, internal audit and inspection, detection of frauds and check on them; viability of RRBs, wage structure, Incentives to employees and coordination at the State level.
4. (a) *Functions* : basic functions, deposit mobilisation, credit mobilisation, marketing of services.
(b) *Prospects*: Performance, prospects and problems of RRBs; brief study of Dantwala Committee Report; A brief study of performance of RRBs in Rajasthan.
5. *Other Agencies*: Rural financing by commercial banks, cooperative banks and other agencies, financing under various schemes; economic viability, technical feasibility and financial feasibility, formulation of bankable schemes; rural orientation, impact of rural banking on the masses, mode of financing: crop loan, equipment financing,

minor irrigation, dairy farming, poultry, transport, 1983 and 3/4th March 1984 village adoption scheme, retail trade, bio-gas; NABARD/ Government guidelines for financing of various sectors.

Books Recommended :

1. Panandiker: Rural Banking.
2. D'Mellor Shah & Patel : Rural Economics.
3. Desai, Vasant : Rural Development
4. Suneja, H.R. : Bank Lending to Priority Sector.
5. Swarup, Gopal : Advances to small Industries and small Borrowers.
6. Dessai S.M.M. : Rural Banking in India.

N.B.(a) Besides these six papers, every candidate for the Post-graduate Diploma in Bank Management will submit a monograph on an approved title relating to the field of Bank Management. The monograph shall be of 100 marks to be assessed by two external examiners (with equal weight).

- (b) Provisions regarding eligibility for admission division etc. will be the same as for the existing P.G. Diploma in Banking and Finance.

APPENDIX-I

(*Ref. Res. No. 10 of the Minutes*)

T.D.C. I Yr. Commerce :

Paper I : Indian Economy :

1. Basic features of Indian Economy—Causes of under development.
2. Natural Resources.
 - (i) Soils of India.
 - (ii) Forests.
 - (iii) Irrigation—Main sources, Main River Valley Projects (Bhakra, D.V.C. and Tungbhadra)
 - (iv) Agriculture—Salient features of Indian Agriculture.
 - (v) Animal Wealth
 - (vi) Power Resources—Coal, Mineral, Hydro Electricity Atomic.
 - (vii) Mineral Resources—Iron, Manganese, Copper, Bauxite, Mica, Atomic Minerals.

Economy of Rajasthan—Physical features, Water resources, River Valley Schemes (Chambal, Mahi and Rajasthan Canal) Minerals, Large Scale Industries, Irrigation and power, Human Resources, Agencies and Schemes for Rural Development, Five Year Plans and their achievements.
4. Population Problems : Growth of Population, Physical and Occupational distribution and density, Population planning, Unemployment problem.
5. Industries : Problems of location and Development of Iron and Steel, Cotton Textiles and oil Refining Industries. Role and Problems of Small Scale Industries.
6. Trade : Volume, Composition and Direction of Indians Foreign Trade. Transport Policy, Coordinations of transport services. Major Posts.

T.D.C. II Yr. Commerce :

Paper I : Principles of Economics :

Section-A :

Introduction & Scope: Micro and Macro Economics, Methods, Laws and Significance of Economics. Consumption : Wants Utility, Cardinal and Ordinal Approaches, Laws of Diminishing Marginal Utility, Consumer's Surplus, Characteristics of Indifference Curves, Demand Increase and Decrease,

Extension and Contraction of demand, Law of Demand price, Elasticity of Demand, degrees of elasticity, measurement of elasticity.

Production: The Factors of Production, Land, Labour, Theories of population, efficiency of Labour, Capital Characteristics, Capital Formation, Organisation, Division of Labour, the Scale of Production.

Section-B :

Exchange Market: Its Classification and Cost of Production--Prime Cost and Supplementary Cost, Opportunity Cost, Analysis of Revenue; Price determination in short and long period under the conditions of perfect Competition, Monopolistic Competition and Monopolies, Discriminating Monopoly Control of Monopoly.

Distribution: National Income and Economic Welfare. Marginal Productivity Theory, Theories of Determination of Rent, wages, Interest and Profit.

Paper II—Monetary and Fiscal Administration :

Section A : Monetary Administration :

Money: Evolution, nature and Functions of Money, the Role of Money in various economic Systems, Classification of Money, Paper Money, Principles and Methods of notes issue, Management of Indian Currency Systems.

Value of Money, the Quantity Theory—Fisher, Cambridge and Keynesian equations, Inflation and Deflation, their effects on Economic Growth.

Monetary Standard : A brief study of Monetary Standards evolution, growth, downfall and present position of gold standard Monetary Policy of India.

Section 'B' : Indian Banking :

Types of Banks—Unit and Branch Banking, Indian Banks, System : R.B.I. NABARD, SBI, Foreign Exchange Banks, Reserve Banks and other commercial Banks. Study of recent development in Banking in India, Salient features of the Banking Regulation Act 1949, Agricultural Credit.

Section 'C' : Fiscal Administration :

Economic and Fiscal Administration—Meaning, Basic Principles, A brief study of Indian Fiscal Tools, Expenditure, Borrowing & Lending, Centre-State Financial Relations.

Public Finance its meaning, Principle of Maximum Social Advantage, Canons of Taxation and Expenditure.

T.D.C. III Yr. Commerce :**Paper I : Economic Planning :****Section-A :**

Macro Planning: Meaning and Importance of Planning, Types of Planning, Objectives, Techniques, Plan Formulation, Execution and Evaluation.

Section 'B' : Economic Planning in India :

Economic Planning in India Since 1951 with reference to following sectors of the Indian economy.

Agriculture—Land Reforms, Green Revolution and New Agricultural Strategy, Agricultural Marketing, I.R.D.P.

Industry: Industrial Policy, Role of State in the Industrial Development, Growth of Public-Sector with Special reference to Steel, Petroleum, Cotton Textiles and Fertilisers. Growth of Joint Sector,

Trade: Commercial Policy, Export and Import Policy.

Section 'C' : Economic Planning in U.S.S.R. (Since 1917) :

Soviet Economy on the eve of Revolution, War Communism, New Economic Policy, Main Objectives and Achievements of the Plans in the field of Agriculture Industry. Lessons to be drawn from the economic development of U.S.S.R. for developing economics with special reference to India.

Section 'D' : Economic Planning in Japan :
(General Background)

Salient Features of economic development of Japan after 1945 with special reference to Agriculture, Industry, Trade and Transport, Factors responsible for the rapid growth of Japanese economy after the Second World War, Lessons to be drawn from the Economic development of Japan for developing economics with special reference to India.

Section 'E' : Micro Planning :

Project Planning—Defining the Project, the objectives, Identification and Definition, Project Classification, Project Formulation and Planning Project Formulation and the Entrepreneur Project and Financial Institutions, Project Planning and the Government. General Aspects of Project Appraisal and its Significance.

*Note :—*The B.O.S. recommends that Paper I on Planning may be made compulsory for the students.

Books : (For Micro-Planning)

D.K. Jain : Project Planning and Appraisal in Planned Economy. The Indian Context (Uppal Publishing House, New Delhi, 1981 Ed.) I.M.D Little and J.A. Mirrlees : Project Appraisal and Planning for Developing Countries. (Oxford I.B.H. Publishing Co., New Delhi, 1978 Ed.).

Paper II—Elements for International Finance:

International Finance : Meaning, Scope and Importance, Sources of Finance and problems.

Short Term Finance for International Trade: Acceptance and Discounting of Bills, the Role of Accepting and Discounting Houses, Documentary Credit, the Euro-Currency Market and its importance in International Finance.

Exchange Rates :

Exchange Rates and I.M.F. Short term Finance & I.M.F.

Balance of payments :

Balance of Trade and Balance of Payments; Methods, Techniques of Balancing, International Payments.

Development Finance: Importance and problems of Development finance, Sources of Development Finance; A study of the I.B.R.D. and its affiliates, the Asian Development Bank their roles in economic growth of backward regions.

Long term International Finance : Nature and Problems; The Export-Import Banks of U.S.A., Japan and India.

Insurance of Exporters Credit : Importance of Insurance of Exporters Credit, A brief study of the export Credit and Guarantee Schemes in U.K. and India.

Foreign Aid : Its Philosophy and Application; Trends in the growth of Foreign Aid, Problems and Future Prospects of Foreign Aid in Economic development, The U.N.C.T.A.D. A critical study of the role of UNCTAD.

Paper III—Law & Practice of Banking :

(Same as given on pages 28-29 of B.Com. (Pass) Final Year Exam., 1983)

Paper IV—Cooperation & Rural Development :**Section-A :**

Theory of Cooperation: Introduction. Origin and Development, Definition of Cooperative Principles and their analysis;

Cooperation Vs, Capitalism and Socialism; Cooperation as synthesis. Legal frame work of Cooperatives. Basic Features of cooperative legislation of 1904 and 1912; Brief study of Rajasthan State Corperative Societies Act. 1965.

Section-B :

History and Growth of Cooperative Movement in India since Independence.

Cooperative Banking Structure—Agri. Credit Societies, Service Societies. Large Sized Societies, Central Cooperative Banks.

Forms of Cooperatives:

Consumer's Cooperation : Meaning, Objects Progress during Plans: Structure. Working and Management; Pricing Policy; Problems and Suggestions. Other Forms of Cooperative--Cooperative Farming, Housing Cooperatives, Industrial Cooperatives, Urban Credit Cooperatives.

Cooperative Marketing & Processing :

Aims, Objectives, Sources of Finance, Business, Practice,s Linking of Credit with Marketing. Development of Processing Societies with special reference to Sugar Cooperatives, Problems and Suggestions.

Section 'C' :

Cooperative management : Importance, Functions of the General Meeting, Board of Directors, Delegation of Authority Promotion, Recruitment Policy, Problems of Cooperative Management, Cooperative Audit and Supervision. R.B.I. & Cooperation, Personnel Policies and Training.

Section-'D' :

Rural Development: Importance of Rural Development, State and Rural Development, Special programmes and Schemes for Rural development Tryse, NREP Desert Development Programe. Agencies for Rural Development; Rural Development and Panchayat Raj.

MEETING OF THE B.O.S. IN URDU, PERSIAN AND
ARABIC WAS HELD ON 5.10.83 AT 12.00 NOON
IN VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS, JAIPUR.

The following attended :—

1. Dr. Fazle Imam Rizvi
2. Dr. A.F. Usmani
3. Shri Mazhar Ali
4. Dr. Mohammed Ali Zaidi. *Convener*

1. Under Sub section (8) of Section 24E of the University Act Dr. Mohammed Ali Zaidi was appointed Convener of the Board of Studies for a fresh term of three years.
2. Under Clause (IV) of Sub Section 4 of Section 34 of the University Act. Dr. A.F. Usmani was elected Member to serve on the Committee for selection Examiners in the subject for the year 1984.
3. Statement of qualifications and teaching experience of the teacher was not made available hence the panel of examiners could not be revised and scrutinised. All the members were of the opinion that the panel of examiners be made available in the next meeting.
4. No reports were placed before the Board hence no comments. All the reports of the examiners be made available for comments in the next meeting.
5. Item No. 5 of the Agenda relating to courses of study was postponed since the members wanted time to think over it in details
6. All the members of the Board unanimously recommended that syllabus of Urdu, Persian and Arabic should be printed in Urdu script in order to avoid errors and printing mistakes which invariably occur every year in the syllabus. They were also of the unanimous view that translation of Urdu syllabus into Hindi or English was neither practicable nor possible.
7. The members discussed at length the letter from the Secretary U.G.C. The letter mainly relates to the discipline of History. However the members have taken care to see that only

such books are prescribed which promote national harmony and integrity since Urdu itself is a living symbol of national integration.

The meeting ajourned at 4.30 P.M. The next meeting of the Board may be convened in October, 1983.

Sd/-
(Mohammed Ali Zaidi)
Convener
Board of Studies in Urdu,
Persian and Arabic,
Rajasthan University

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN HISTORY ARCHAEOLOGY AND CULTURE HELD
ON THE 10TH OCTOBER, 1983 AT 12.00 NOON IN
THE VICE-CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS. JAIPUR.

Present :

- | | |
|----------------------|------------|
| 1. Dr. V.S. Bhargava | (Convener) |
| 2. Dr. M.S. Jain | |
| 3. Dr. R.G. Sharma | |
| 4. Shri P.M. Mehnot | |
| 5. Shri S.R. Bhootra | |
| 6. Dr. G.N. Sharma | |

1. Under section 24E(8) of the University Act, the Board unanimously appointed Dr. V.S. Bhargava, Principal, Government College, Tonk as Convener of the Board of Studies in History, Archaeology and Culture for a fresh term of three years.

2. Under Clauses (iv) of Sub-section (4) of Section 34 of the University Act, the Board elected Dr. M. S. Jain, Head of the University Department of History and Culture, Jaipur as a member other than the Convener of the Board of Studies on the Committee for selection of examiners in the subject for the year.

3. The Board scrutinised the statement of qualifications and teaching experience etc. of teachers received from the University teaching departments, University Colleges, Affiliated Institutions and other Universities for inclusion in the revised panel of examiners and prepared the complete panel of examiners in terms of Clause 2 (a) of Statute 25 of the University Hand Book Part II and resolved further to make entries if any by the Convener and the member of examiner's Committee.

4. The Board offered no comments on the report of examiners and question papers set for the various examinations of 1983.

5. The Board started consideration of the courses of study and text books together with the relevant additions and/or alterations to the ordinances and regulations for the Under-graduate and Post-graduate examinations of 1986, and resolved as under :—

- (i) In terms of letter No. F. 3-29/80/CP/II dated 10.2.1982 from the Secretary, University Grants Commission, New Delhi, the Board suitably modified the Syllabus of H.I.C.C. for the first year T.D.C. Examination, 1986, as per appendix—I.

- (ii) The Board resolved that there should be six periods per week for H.I.C.C. in accordance with work-load provided for optional papers for Under-graduate classes.
- (iii) The Board discussed the general principles of Syllabus of B.A. Final (Third year T.D.C. Pass Course) examination, 1986 and was of the opinion that there should be four papers at the B.A. Final Examination, 1986. The details of the papers will be framed in the next meeting.

6. The Board considered the matter of translation of Syllabuses into Hindi and resolved that it will be taken in the next meeting when the Syllabuses of various examinations is finalised.

7. The Board postponed consideration of the remaining items of the agenda for the next meeting.

The Board adjourned the meeting at 5.00 P.M. of this date to meet again in the months of December, 1983.

The meeting ended with a vote of thanks to the Chair.

Convener
Board of Studies in
History, Archaeology & Culture.

APPENDIX—I

Ref. Res. 5 (1) dated 10.10.83 of B.O.S. in History)

HISTORY OF INDIAN CIVILISATION AND CULTURE

Scheme :

Min : Pass marks 36 : Max. Marks 100

One : Paper 3 hrs duration Marks 100

Syllabus :

1. Fundamental Religious Ideas—Vedas Upanisheds and Gita, Yoga, Buddhism and Jainism.
 2. Fundamental Social Institutions, Family, Caste.
 3. Literary Haritage : Epics, Kalidasa, Tulsidasa, Tagore.
 4. Attempts at cultural synthesis during the medieval period—religion and art.
 5. Indian renaissance in the nineteenth century.
 6. National Movement—Contribution of Tilak, Gandhi and Nehru.
-

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN POLITICAL SCIENCE HELD ON
12TH DECEMBER, 1983 AT 12.00 P.M.
IN THE VICE-CHANCELLOR'S
SECRETARIAT.

Present :

1. Prof. V.R. Mehta
2. Dr. M.P. Roy
3. Shri P.K. Chaddha
4. Dr. V.K. Arora
5. Shri S.R. Jain

1. The members considered the Undergraduate syllabi of the University and resolved to approve the syllabus given in Appendix I for B.A., Pass Course, and Appendix II for B.A. (Honours) Course.

2. The members authorised the Convenor, Board of Studies to revise the syllabus for M.A. Previous and Final Examination in the light of discussions held in the meeting, and forward the same to the Academic Branch of the University for necessary action.

3. The meeting ended with a vote of thanks to the Chair.

Sd/-
(V. R. Mehta)

APPENDIX I

B.A. (PASS) FINAL YEAR EXAMINATION

Paper I—Representative Political Thinkers

1. Plato and Aristotle
2. Aquinas and Machiavelli and Kautilya
3. Hobbes, Locke and Rousseau
4. Bentham, Mill
5. Marx and Gandhi

Books Recommended :

1. A. Hacker, Political Theory
2. G. H. Sabine, History of Political Theory
3. C. Wayer, Political Thought
4. Foster, Masters of Political Thought. Vol. I
5. Jones, Masters of Political Thought, Vol. II
6. Lancaster, Master of Political Thought, Vol. III
7. Chaddha, Pramukh Rajnik Vicharak (Adarsh Prakashan)
8. Pukhraj Jain, Adhunik Rajnitak Sidhanta

OR

Paper I—Political Ideologies

- I Nature of Political Ideology; Factors shaping Political ideologies.
- II. Liberalism, Imperialism, Capitalism
- III. Socialism: Utopian and Scientific including communism.
- IV. Guild Socialism, Syndicalism, Anarchism
- V. Gandhism and Radical Humanism.

Core Books

1. Ebestien: Today's Isms
2. Cockers: Recent Political Thought
3. K.N. Verma: Adhunik Rajnitik Chintan.

Paper II—International Relations Since 1945.

- (a) Peace Settlement after World War II; Cold War and Non-alignment; U.N.O. ; its organisation and working.
- (b) Rise of U.S.A. and Soviet Union as super powers; Decolonisation and the emergence of new States in Asia and Africa.
- (c) Foreign Policy of U.S.A., U.S.S.R. and China.

- (d) Foreign Policy of India with special reference to her neighbours.
- (e) Contemporary trends and issues in International politics.

Books recommended :

1. Black and Thomsan : Foreign Politics
2. Jordan, Connel Smith : Pattern of the Post-War World 1982.
3. S.N. Dhar : International Problems and Worlds Politics since 1940 (Part II to be studied).
4. Haridutt Vedalankar : International Politics.
5. Chaddha : Hamare Rashtriya Sambandh.
6. Dinanath Verma : Antar-rashtriya Sambandh (Gyanda, Patna)
7. Mahendra Kumar : International Politics

B.A. (PASS) SECOND YEAR EXAMINATION

Paper I—Modern Government :

- (i) U.K : Salient Features; conventions; Rule of Law, Crown, Prime Minister and Cabinet, Parliament, Ministers and Civil Servants, Delegated Legislation, Party System.
- (ii) U.S.A. : Salient features, The separation of Powers, Bill of Rights, Federalism. President and His Cabinet, Congress, Suprem Court & Judicial Review, Party system.
- (iii) U.S.S.R. : Salient features, Federalism, Fundamental rights, Suprem Soviet President, Suprem Court, Communist Party.
- (iv) Switzerland : Salient features, Federal Assembly, Executive, Direct Democracy, Federal Judiciary.
- (v) Japan : Salient features, King, Prime Minister and the Council of Ministers, Diet, Fundamental Rights, Political parties.

Books recommended :

1. Ogg & Zink : Modern Foreign Government.
2. Menelly : Contemporary Government in Japan, Jough-ton Miffin, 1963.
3. Babulal Fadia : Vishwa Ke Pramukh Samvidhan. .
4. Iqbal Narain : Vishwa Ke Samvidhan.

Paper II—Indian Political System

1. National Movement in India; Moderates, Extremists and Gandhians.
2. Constitutional Developments Morley Minto Reforms, Dyrarchy, Provincial autonomy.
3. The Republican Constituon of India; Salient features—Fundamental Rights, Directive Principles of State Policy, Union Executive, Central Parliament, Supreme Court of India and Judicial Review.
4. Union State Relationship, Emergency Provisions, Office of the Governor, Method of Amendment.
5. Nature and determinants of Indian Politics; Problems of Regionalism, Castism, Communalism and Linguism, Electoral Politics and Party system, National Integration in India.

Books Recommended :

1. N.D. Palmer : The Indian Political System (Houghtion Miflin, Boston, 1971).
2. Rajni Kothari : Bharat Main Rajniti (Orient Longmans, New Delhi, 1972).
3. R.L. Hardgrave, Jr. : Indian Government and Politics in a developing Nation (Harcourt, Brace and World, Inc., New York, 1970).
4. Govind Ram : Bhartiya Shasan and Rajniti.
5. Pukhraj and Fadia : Bhartiya Rajya Vyavastha.

B.A. (Pass) First Year Examination

Paper I—Principles of Political Science :

1. Political Science—Definition, Nature and scope, Approaches to the study of Political Science—Normative, Historical & Behavioural; Relationship with other social sciences.
2. State, Society, Nation; Nature of State : Contractual and organic theories; Origin of State; Contractual and Historical Theories; Sphare of study activity : Laissez-Faire and Welfare Theories.
3. Soveriegnity : Monistic and realistic theories. Concepts : Law, Liberty, Equality, Justice, Power, Authority and their-relationship.
4. Forms of Political System : Democracy and Dictatorship, Parliamentary and Presidential, University and Federal.

5. Organisation of government : Theory of separation of powers, Legislature, Executive and Judiciary, Patterns, functions and relationship, Party system and Pressure Groups, Public opinion and Local Government, Theories of representation.

Books recommended :

1. Asirvatham : Political Theory (Hindi and English editions).
2. MacIver : The Modern State.
3. A.D. Pant : Rajniti Shastra Ke Mool Aadhar, Marg 1, Kitab Mahal, Allahabad.
4. Appadorai : Substance of Politics (Hindi and English editions).
5. Pennock and Smith : Political Science—An Introduction.
6. Roy, Das Gupta and Ray : Principles of Political Science.
7. S.N. Dubey : Rajnitik Shastra ke Sidhanta, Part I, Shivalal Agarwal & Co., Agra.
8. Pukhraj Jain : Rajniti Shastra Ke Sidhanta.

APPENDIX—II

B.A. (Honours) PART FIRST EXAMINATION

Paper I—Ideologies

1. Nature of Political Ideology; Factors Shaping political ideologies.
2. Liberalism, Imperialism, Capitalism.
3. Socialism, Utopian and Scientific including communism.
4. Guild Socialism, Syndicalism, Anarchism.
5. Gandhism and Radical Humanism.

Core Books :

1. Abestien : Today's Isims.
2. Coker : Recent Political Thought.
3. K.N. Verma : Adhunik Rajnitik Chintan.

Paper II—Modern Governments.

- I. U.K. : Salient Features, conventions; Rule of Law; Crown, Prime Minister and Cabinet. Parliament, Ministers and Civil Servants, Delegated Legislation, Party System.
- II. U.S.A. : Salient features, The separation of powers, Bill of Rights, Federalism, President and His Cabinet, Congress, Supreme Court & Judicial Review, Party System.
- III. U.S.S.R. : Salient features, Federalism, Fundamental rights, Supreme Soviet, President, Supreme Court, Communist Party.
- IV. Switzerland : Salient features, Federal Assembly, Executive, Direct Democracy, Federal Judiciary.
- V. Japan : Salient features, King, Prime Minister and the Council of Ministers, Diet, Fundamental Rights, Political Parties.

Books recommended :

1. Ogg & Zink : Modern Foreign Government.
2. Manely : Contemporary Government in Japan, Houghton Mifflin, 1963.
3. Babulal Fadia : Vishwa ke Pramukh Samvidhan.
4. Iqbal Narain : Vishwa ke Samvidhan.

Paper III—Indian Political System.

1. National Movement in India; Moderates, Extremists and Gandhian.
2. Constitutional Development : Morley Minto Reforms, Dyrarchy, Provincial Autonomy.
3. The Republican Constitution of India: Salient features—Fundamental Rights, Directive Principles of State Policy, Union Executive, Central Parliament, Supreme Court of India and Judicial Review.
4. Union State Relationship, Emergency Provisions, Office of the Governor, Method of Amendment.
5. Nature and determinants of Indian Politics : Problems of Regionalism, Castism, Communalism and Linguism, Electoral Politics and Party System, National Integration in India.

Books Recommended :

1. N.D. Palmer : The Indian Political System
(Houghton Mifflin, Boston, 1971)
2. Rajni Kothari : Bharat Main Rajniti (Orient Longmans, New Delhi, 1972)
3. R.L. Hardgrave, Jr. : Indian Government and Politics in a Developing Nation
(Harcourt, Brace and World, Inc., New York, 1970).
4. Govind Ram : Bhartiya Shashan and Rajniti.
5. Pukhraj and Fadia : Bhartiya Rajya Vyavastha.

Paper IV—Elements of Public Administration

(Same, as at page 28–29 of the present syllabus of 1982 edition)

B.A. (Hons) Part II Examination

Paper V—History of Western Political Thought :

- I. Greek Political Thought : Plato, Aristotle.
- II. Indian Political Thought : Vyas and Kautilya.
Roman Political Thought : Cicero and
St. Augustine
Medieval Political Thought : Aquinas.
- III. Modern Political Thought : Machivelli, Hobbs,
Locke, Rousseau.
- IV. Benthan, Mill, Hegel, Green.
- V. Karl Marx and Gandhi.

Books recommended :

1. Sabine, History of Political Thought.
2. Barker, Plato and his Predecessors.
3. Dunning, History of Political Thought.
4. Allen, Sixteenth Century Political Thought.
5. Alexander Gray, Socialist Tradition.
6. Ebenstein, Great Political Thinkers.

Paper VI—Nation-Building & Political Development :

1. Differences in traditional and modern society.
2. Relationship between Political Development and other kinds of development.
3. Political System—Democratic and Authoritarian, Totalitarian.
4. Concepts of Modernisation and Political Development.
5. National Unity and problems of integration in developing countries with special reference to India.

Books Recommended :

1. Lucian Pye—Aspects of Political Development.
2. L. Binder—Crisis and Sequences of Political Development.

Paper VII—Indian Administration :

- (a) Evolution of Administration in India; The British Legacies; The Constitutional and Political System in India and its Administrative Implications; The Nature of Administrative Problems.
- (b) Organisation and working of the Union Ministries of Home, Finance and Foreign Affairs; State Administration; Role of the Chief Secretary; Police Administration in the States.
- (c) The District Administration; Role of the Collector; Changing Patterns; Panchayati Raj and District Administration in the States. Judicial Administration at Lower Levels.
- (d) Role of Bureaucracy; The Problems of Generalist and Specialist in Public services; The Role of Public Services in Economic Administration and Administration of the Public Enterprises; Minister-Civil Service Relations; p.

- (e) Financial Administration in India : Budget—its formulation and execution; role of the public Accounts and Estimates Committees and Comptroller and Auditor General of India; Performance Budgeting and Audit Problem Areas and Reform Perspectives.

Books Recommended :

1. Chanda Ashok, Indian Administration.
2. Maheshwari, S R., Indian Administration.
3. Organisation of the Government of India, IIPA.

Paper VIII—No change.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES
IN HISTORY ARCHAEOLOGY AND CULTURE HELD
ON 14/15 DECEMBER, 1983 AT 12.00 NOON IN THE
VICE-CHANCELLOR'S SECRETARIAT, UNI-
VERSITY CAMPUS, JAIPUR.

Present :

1. Dr. V.S. Bhargava (Convener)
2. Dr. M.S. Jain,
3. Dr. R.G. Sharma,
4. Shri S.R. Bhootra,
5. Shri P.M. Mehnot,
6. Dr. Gopinath Sharma.

N.B. : Dr. R.N. Chaudhari could not attend the meeting.

The Board considered the remaining items of the agenda at its meeting held on 10th Oct., 1983.

1. The Board recommended the courses of Study and text in the subject for the following examinations together with the relevant additions and for alterations to the Ordinances and regulations as mentioned below :

(i) Degree-examinations :

- | | |
|--|--------------------|
| (a) First Year T.D.C. (Pass) Course examination, 1986. | As per Appendix I |
| (b) Second Year T.D.C. (Pass) Examination, 1986. | As per Appendix II |
| (c) Third Year T.D.C. (Pass) Examination, 1986. | |

(ii) Honours Examinations (Two year Scheme) :

- | | |
|----------------------------------|--------------|
| (a) Part I Examinations, 1986 } | As per |
| (b) Part II Examinations, 1986 } | Appendix III |

(iii) Diploma Examination in History and Indian Culture, 1986—No change.

(iv) Post Graduate Examination :

- | | |
|------------------------------------|-------------|
| (a) M.A. Prev. Examination, 1986 } | As per |
| (b) M.A. Final Examination, 1987 } | Appendix IV |

(v) M.Phil. Examinations, 1987—No change.

2. The Board considered Resolution No. 2 of the Faculty of Social Sciences dated 25 Aug., 1983 and postponed the consideration of the item in view of the matter being sub-judice

3. The Board resolved that in view of the fact that the paper IV-d, Indian Nationalist Movement & Thought (M.A. Final) traditional has been re-introduced for the M.A. Final Examination of 1987, the deletion of this paper for the M.A. Final Examination of 1986 may be made non- mine the paper is already in and will continue after 1987 also.

4. The Board noted the contents of the letter No. F 4-19/82 (ER) dated 19-1-83 received from the U G.C. New Delhi, regarding examinations reforms.

5. The Board also noted the contents of the letter No. F. 3/82/ (P) dated 28-7 82 received from the U.G.C., New Delhi to revise the all syllabuses in Paper Units.

6. The Board could not translate the Syllabi into Hindi and resolved that it will be taken up in the next meeting.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(Dr. V.S. Bhargava)
Convener,
B.O.S. in History Archaeology
& Culture.

APPENDIX—I

(Ref. Res. No. 1 of B.O.S. in History)

(First Year T.D.C. Pass Course)

20 History

Min. Pass 36.

Max. 100 Marks.

One Paper 3 hrs. duration

100 Marks.

Paper : Ancient Indian History and Culture (1000 AD)

1. Indus Valley Civilization, Kali Banga and Ahrar Culture, Vedic Age a brief survey of the Main Sources of the period.
2. Jainism, Buddhism and Rise of Magadha upto the Nandas.
3. Age of the Mauryas, Chandragupta and Ashoka, Down-fall of the Maurya Empire, Satvahanas with special reference to Gautamoputra Satkarni, Kanishka—I.
4. Political and Cultural Achievements of Gupta Age—Samudragupta and Chaudragupta II and their Achievements.
5. Harsha, Origin of Rajputs, their Life and Culture—Indian Culture abroad.

Books Recommended :

- | | |
|------------------|---|
| 1. R.S. Tripathi | History of Ancient India
(Also available in Hindi) |
| 2. N.N. Gosh | Early History of India
(Also in Hindi) |
| 3. P.L. Bhargava | Pracheen Bharat-Ka-Itihas. |
| 4. R.B. Pandey | Pracheen Bharat. |
| 5. R.K. Mookerji | Man and Thought in Ancient India. |

APPENDIX—II

(Second Year T.D.C. Pass Course)

20 History

Min. Pass Marks 72.

Max. Marks. 200.

Paper—I 3 hrs. duration

100 marks.

Paper—II 3 hrs. duration

100 marks.

Paper—I Medieval Indian History and Culture (1000-1740 A.D.)

1. Turkish Conquest, Prthviraj Chauhan, Slavas and Khiljis and Tughleqs.
2. Maharana Kumbha, Sanga and Vijaynagar Empire.
3. Babar, Hymayun, Sher Shah and Akbar.
4. Jahangir, Shah Jahan, Aurangzeb, Rajput relations with the Mughals and the Marathas—Role of Chander Sen Rao.
5. Bhakti Movement, Cultural synthesis during the medi-eval period, Art and Literature and Administration in Medieval period.

Books Recommended :

1. A L. Srivastava : Delhi Sultanate (also available in Hindi).
2. A.L. Srivastava : Mughal Empire (Also available in Hindi).
3. R.P. Tripathi : Rise and fall of the Mughal Empire (Hindi).
4. Ishwari Prasad : A short History of Muslim Rule in India (Also available in Hindi).
5. S.R. Sharma : Crascent in India (Also available in Hindi).
6. A.B. Panda : Mediawal india (Also available in Hindi)

Paper—II Modern Indian History and Culture (1740-1950 A.D.)

1. Third Battle of Panipat, Establishment of British Rule, Role of Mahadaji and Nana Pharnaies. Marathas struggle with the British.
2. Rise and fall of Mysore, Ranjit Singh and the annexation of the Punjab British Administrative reorganization. The outback of 1857. Administrative changes under Ripon and Curzon.

3. Renaissance in the 19th Century, Social and Religious Reform Movement.
4. Growth of Nationalist movement in India. Freedom struggle in Rajasthan, Tilak and Gandhi Impact of British rule in Economic life.
5. Constitutional development of India in the 20th Century, partition and Independence of India. Salient features of the constitution of 1950.

Books Recommended :

- | | |
|--------------------------|---|
| 1. Sarkar and Dutta | —Modern Endian History Vol. II (also available in Hindi) |
| 2. P.E. Roberts | —History of British India (O.U.P.) (Also available in Hindi) |
| 3. Ishwari Pd. & Subedar | —A History of Modern India from 1740-1950 (Indian Press) Hindi. |
| 4. Dr. M.S. Jain | —Audhinik Bharat Ka Itihas. |

APPENDIX—III

(Ref. Res. No. 1 dated 14/15 December, 1983 of Board of Studies in History)

DETAILED SYLLABUS OF B A. HONS (HISTORY)

PART. II.

Paper—VIII—Political History of Rajasthan (1100-1950)

The Rise of Chauhans with special reference to Prithviraj III; The relations of Sultans of Delhi with Rajput States of Chittor, Ranthambhor, and Jalor, Kumbha; Mughal hegemony in Rajasthan—resistance and submission—Maharana Pratap, Man Singh of Amber, Rai Singh of Bikaner and Sawai Jai Singh II.

Maratha Intervention; Treaties of 1818 with special reference to Kota and Jaipur: 1857 uprising; Prajamandal movement with special reference to Mawar Prajamandal and Marwar Lok Parishad; Integration of the States of Rajasthan.

Salient features of Social life—Organisation of Society caste, Feudal system; Impact of the British.

Books Recommended.

1. Dashrath Sharma : Early Chauhan Dynasties.
2. G.N. Sharma : Social life in Medieval Rajasthan.
3. G.N. Sharma : Mawar and the Mughal Emperors.
4. V.S. Bhargava : Marwar and the Mughal Emperors.
5. Laxman Singh : Political and Constitutional Developments in the Princely State of Rajasthan (1920-1949)
6. V.P. Menon : Story of the Integration of the Indian States, (Chapter related to Rajasthan).
7. K.S. Gupta : Mawar and the Marathas.
8. V.K. Vashistha : Rajputana Agency (Chapters on Social Reforms and 1857 uprising).
9. H.C. Tikkiwal : Jaipur and Later Mughals,
10. G.R. Parihar : Marwar and the Marathas 1724-1843AD
11. G.C. Mishra : Sindhiolkar-Rivalry

APPENDIX—IV

(Ref. Res No. 1 of B.O.S. in History)

M.A. (Previous) Traditional Scheme.

There shall be four papers. Each paper shall be of 3 hours and duration each carrying 100 marks.

- Paper—I Either (a) Modern World (1919-1949)
 or (b) Contemporary India & the World (1935-1970)
 or (c) East Asia (1970-1950)
 or (d) West Asia (1840-1950) Turkey Iran & Arab. World including Egypt.)
 or (e) History of U.S.A. (1860-1950)
 or (f) History of Russia (1860-1945)
- Paper—II Either (a) European History (1789-1870)
 or (b) European History (1870-1947)
 or (c) History of England (1815-1919)
 (d) Constitutional History of England (1603-1931)
- Paper—III—Either (a) Political & Cultural History of Rajasthan (7th Century to 1600)
 or (b) Political & Cultural History of Rajasthan (1962-1949)
- Paper—IV—Either (a) Ancient India (600 BC to 78 AD)
 or (b) Medieval India (1200-1526 AD)
 or (c) Modern India (1756-1858 AD)

M.A. (History-Final)

There shall be five papers, three from any of the following alternative groups of Indian History corresponding to the IV paper M.A. (Previous) and any one from the various alternatives in the fourth and fifth papers. Each paper shall be of three hours duration carrying 100 Marks.

Group 'A' (Ancient India)

- Paper—I (a) Ancient India (78 AD to 650 AD).
- Paper—II (a) Either (i) Ancient Indian. Art, Architecture and iconography.
 (ii) Elements of Indian Archaeology.
 or (iii) Epigraphy and Numismatics.
 or (iv) History of Northern India (650-1200 AD)

- Paper—III (a) Either (i) Political Ideas and Institutions of Ancient India.
 or (ii) History of Buddhism.
 or (iii) Social History Ancient India.
 or (iv) Social and Cultural History of South India upto the end of the Cholas.
 or (v) History of Religious Ideas—
 Vaishnavism, Shaivism, Jainism and Buddhism.

Group 'D' (Medieval India)

- Paper—I (b) Medieval Indian (1526-1656 A.D.) Political History & Administrative Institutions.
 Paper—II (b) Medieval India (1656-1761 A.D.) Political History & Administrative Institutions.
 Paper—III Either—(a) Medieval Society, Religion Art and Architecture.
 (b) Sufism.

Group 'C' (Modern India)

- Paper—I (c) Modern India (1858-1919 A.D.)
 Paper—II (c) Modern India (1919-150) A.D.)
 Paper—III (c) Modern India (Social & Economic History of Modern India)
 Paper—IV—Either.
 (a) History of Ancient Indian Thought.
 or (b) History of Marathas : Shivaji to Third Battle of Panipat.
 or (c) Sources of Rajasthan History.
 or (d) Indian Nationalist Movement & Thought.
 Paper—V—Either.

- (a) Essay.
 or (b) Meaning and Method of History.
 or (c) Gandhian Philosophy.
 or (d) History of Political Theory.

M.A. PREVIOUS (HISTORY)

Either—Paper (I) (a) Modern World (1919-1949).

Peace settlement. The League of Nations, Reparations
 French Search for Security and Attempts at Disarmament,

Rise of Fascism and Nazism and their impact on World Politics. British Policy of Appeasement. Soviet Foreign Policy. Lenin and his New Economic Policy, Kemal Ataturk and Regeneration of Turkey. Sino-Japanese relations and Communist Revolution in China. Roosevelt and the New Deal Events Leading to World War-II. Birth of the U.N.O.

Resurgence of Nationalism in Africa. Beginnings of Cold War.

(Books as already given in the old syllabus)

See Page-8

OR

Paper II(a)—European History—(1789-1870).

1. Salient features of ancient regime—Role of Philosophers and social and economic forces in the out break of Fr. Revolution.
2. National Assembly, Legislative Assembly. National Convention and Directory.
3. Consulate and Napoleonic empire.
4. Vienna Settlement and concert of Europe—Metternich and Revolutions of 1830 & 48.
5. Unification of Italy and Germany.
6. Napoleon—III and Eastern question.

(Books as already given in the old syllabus) *page 9*
Add. the following new books :—

1. B.L. Punjab : France ki Rajya Kranti.
2. D.S. Chouhan : History of Europe.

Paper III(a)—Political & Cultural History of Rajasthan 7th Century to 1600.

1. A critical study of the sources of the period.
2. The Origin of the Rajputs—their settlements and challenges with special reference to the pratihavas, Parmars, Chauhans, Guhils and Rathors.
3. Resistance to and collaboration with the Mughals.
4. Resistance to the invading forces of the Turks.
5. Social, Religious and Economics condition of the period.
6. Administrative aspects of the period.
7. Contributions of the States to Education, literature and art—The Mughal Impact.

Books Recommended :

1. G.N. Sharma : Mewar and the Mughal Emperors : Mewar Tatha Mughal Samrat (in Hindi) : Social life in Medieval Rajasthan : Rajasthan-ka-Itihas (in Hindi) Marwar and the Mughal Emperors (1966).
2. Dashratha Sharma : Rajasthan through the Ages—Vol. I Prithviraj—III (in Hindi).
3. R.K. Asopa : History of Rathors : Marwar-ka-Sankshipt Itihas.
4. G.H. Ojha : Rajputana-ka-Itihas Vol. I and II (in Hindi). Jodhpur Rajya-ka-Itihas Vol. I (in Hindi). Bikaner Rajya-ka-Itihas (in Hindi).
5. Raghuvir Singh : Purva and Antibuties of Rajasthan Vol. I & II.
6. James Tod : Annals and Antibuties of Rajasthan. Vol. I and II.
7. Vaidya C.V. : History of Medieval Hindu India. Vol. I—III.
8. : The History and Culture of Indian People : Vol. VI (Relevant portion).
9. Ganguly D.C. : History of the Parmars Dynastry. Rajasthan through the Ages Vol. I (Social and Cultural) aspects only.
10. H.B. Sharda : Rana Kumbha, Hammir of Ranthambor.
11. R.N. Prasad : Maharaja Man Singh of Amber.

Paper—I (b) Contemporary India and the World (1835–70).

Either 'Existing syllabus as already given' Page—8.
 or I (c) Existing syllabus as given in paper—II (e) Page—12.
 or I (d) Existing syllabus as given in paper—II (f) Page—13.
 or I (e) Existing syllabus as given in paper—II (g) Page—14.
 or I (f) History of Russia (1860–1945).

1. Reforms of Tsar Alexander—II. Alexander II and Nicholas—II. The Revolutionary democrats-Nardnikes and causes of their failure.
2. The Rise of Social Democratic Party and emergence of Marxist ideology in Russia. Plekhanov and Lenin's contribution to the revolotionalry movement. The revolution of 1905 and its failure.

3. Russia's interest in the Balkans The Berlin Congress, the Franco-Russian alliance. The Anglo-Russian convention of 1907.
 4. Russo-Japanese War. Russia Revolutions 1917. Lenin-His Role and Ideas.
 5. Lenin's New Economic Policy. Stalin and his policies. New constrution of Soviet Union (1936). Soviet Foreign Policy and II World War.
- (Books as already given in paper—II (h) page—16.

Paper—II (b) Existing syllabus given in the book—page—9.
(Books from Sr. 1 to 12 as usual) add the following :—

13. D.S. Chouhan—History of Europe.

Paper—III (b) Political & Cultural History of Rajasthan (1562-1949).

1. A Critical Study of the Sources of the period.
2. The resistance to and Collaboration with the Mughals.
3. A General survey and Mutual revalries between the Kachchwas, Rathores, Sisodias and Hadas.
4. The advent of the Marathas and its consequences.
5. Relations of the major states with the British.
6. Freedom struggle.
7. Administrative, Social Religious & Economic condition.
8. The study of the development of Education, literatue and Art.

Books Recommended :

1. G.N. Sharma : Mewar and the Mughal Emperors
Mewar Tatha Mughal Samrat
(in Hindi) : . Social life in
Medieval Rajasthan : Rajasthan-
ka-Itihas (in Hindi) Marwar and
the Mughal Emperors (1966).
2. M.L. Sharma : History of Jaipur, Kota Rajya-
ka-Itihas (Hindi).
3. R.K. Asopa : History of Rathors, Marwar-ka-
Sankshipt Itihas.
4. G.H. Ojha : Rajputana-ka-Itihas Vol. II (in
Hindi) Jodhpur Rajya-ka-Itihas-
Vol. I and II (Hindi) Bikaner
Rajya-ka-Itihas Vol. I (in Hindi).
5. Raghuvir Singh : Purva Adhunik Rajasthan (in
Hindi).

6. James Tod : Annals and Antiquities of Rajasthan Vol. I and II.
7. Satish Chandra : Parties and Politics of the Mughal Court.
8. Irvine : Later Mughals Vol. I and II.
9. M.S Mehta : Lord Hastings and Indian States.
10. Dr. G.S. Deora : Some aspects. Socio Economic History of Rajasthan.
11. Sashi Arora : Rajasthan Men Nari-ki-Sthiti.

Paper—IV (a) Ancient India (600 BC to 78 AD) :

(Books and syllabus as given in the old syllabus)
See page—18 and 19.

Paper—IV (b) Medieval India (1200—1526 A.D.) :

3 hrs. duration

100 Marks

1. Survey of Main Sources of the period.
2. Condition of India at the time of Turkish invasion, Factors responsible for the establishment of Turkish power in Northern India.
3. Establishment and consolidation of the Sultanate under the Ilbaries, Conflict between the Nobility and the Crown.
4. Khilji Revolution of the Delhi Sultanate. Nature of Khilji Imperialism-Relations with Nobility and Ulema, Market control and Revenue reform.
5. Ghayasuddin Tuglaq. Mohammed Tughlaq's policies and experiments, Relations with Ulema and Nobility.
6. Disintegration of the Sultanate. The Sayyid and Lodhis-Theory of Sovereignty, struggle between Nobility and the Crown.
7. North-West Frontier problem during the Sultanate period.
8. Growth of theory of kingship and Administrative Institutions.

(Books as given in the previous syllabus) page—20.

Add : 1 new book i.e. 1 SSP Nigam : Nobility under Sultanate—Delhi.

Paper—IV (c) Modern India (1726–1958 AD) :

1. The Marathas Third battle of Panipat. Mahadaji Sindhia, Nana Phadanavis-struggle with the British and failure of the Marathas.
2. Establishment of British rule in Bengal, 1726–177.
3. Growth of Administrative system and Charter Acts of 1813–1833 and 1853 .
4. British relations with the Frontier States—Nepal, Afghanistan and Burma.
5. Indian States and the Growth of British Paramountcy 1775–1857 the Doctrine of Lapse. The outbreak of 1857—its causes, nature and results.

(Books as given in the old syllabus) page—21 (Delete N.L. Chaterji's. Add : 1. Bisheshwar Prasad-Bondage and Freedom Vol. I.

APPENDIX-III

M.A. History (Final) Traditional Scheme

Paper-I (a) Ancient India (78-650 A.D.)

- (I) 1. Kanishka and his achievements.
 2. Western Ksatrapas—Nahapāna, Rudraman I and their achievements,
 3. Revival of the Satavahans power under Gautami-putra Satakarni.
 4. History of the Vakatakas with special reference to pravara Sena-I, Vikataka relations with Imperial Guptas.
- (II) 1. The Rise of the Imperial Guptas.
 2. Samudragupta and his achievements
 3. Historicity of Ramagupta.
- (III) 1. Chandragupta II and his achievements.
 2. Skandagupta and his achievements.
 3. Gupta administration.
 4. Huna Invasion and Decline of the Gupta Empire.
- (IV) 1. Cultural achievements of Guptas.
- (V) 1. Later Guptas and their relations with the Maukharis.
 2. Harsha Vardhana, his achievements.
 3. The Account of Fahian and Yuan Chwang.

(Books as already given in the old syllabus) see-page. 22.

Paper II (a) (i) Ancient Indian Art, Architecture and Iconography.
 (Syllabus and books as given in old syllabus) page—23.

Add : 1. V.S. Agarwal—Bhartiya Kala.

Paper II (a) (ii) Elements of Indian Archaeology.

1. Preharappan chalcolithic Culture of Baluchistan, Sindh and North-Western India (Kile-Gul Mohammed, Kalibangan).
2. Harappan and late Harappan civilization; Salient features, Origin and authorship, extent, chronology, devolution 'Harappa, Mohanjodro, Kalibangan, Lothal, Rangapur
3. Post Harappan Culture—Sequence in Punjab, Haryana, Northern Rajasthan and Gungatic Doab : Problem pertaining to O.C.P. and Copper-Hoards, Black-and

Ware. P.G W. and N.B P. Ware culture—a brief survey (Rupar. Hastinapur Kasambhi).

4. Culture—sequence in Western and Central India (Rangpur, Ahar). (Books as given in old syllabus)
Page—24.

Paper II (a) (iii) Epigraphy and Numismatics.

(For books and Syllabus) See page—25.

Add : new books—1. P L. Gupta, Indian coins.
2. Vasudeo Upadhyaya-Bhartiya Sikke.

Paper II (a) (iv) History of Northern India (650—1200)

1. Origin of the Rajputs.
2. Rise and fall of the Pratiharas with special reference to Vatsaraja, Nagabhata. II. Bhoja and their achievements.
3. Palas with special reference to Dharamapala and their achievements.
4. Chahamanas with special reference to Vigaharaja IV and Prithviraj-III and their achievements.
5. Gahadvalas with special reference to Govinda Chandra and Jai Chandra.
6. Chalkyas of Gujarat with special reference to Jain Singh Siddharaj and Kumarapala and their achievements.
7. Paramaras with special reference to Munja and Bhoja.
8. Salient features of Administrative System.
(Books as given in the old Syllabus)—except Book No. 4.

Paper III (a) (i) Political Ideas and Institutions of Ancient India.

(Syllabus and Books available in old syllabus) page-25 & 27.

Add : One new book : 1. Satyakatu Vidyalankar-Prachin Bharat Men Rajnitik Sansthaen.

Paper III (a) (ii) History of Buddhism.

(Books and syllabus) see page—27 (old syllabus).

Add : the following new books :—

1. G.C. Pande : Origins of Buddhism.
2. G.C. Pande : History of Buddh Dharma.

Paper III (a) (iii) Social Ideas and Institutions.

1. Main sources of study.
2. Origin and development of Varna and Jati position of Shudras and the Institutions of Slavery—Ashram-Vyaya

the—Concept of Rin and the Pursharatha—Samskaras with special reference to Upanayana and Vivah.

3. Concept of Joint family system and position of Women.
4. Law of inheritance and concept of Stridhana.

(Books as already given in the old syllabus).

Paper III (a) (iv) Social and Cultural History of South India Upto the end of the Cholas.

(Books and syllabus available in old syllabus).

Paper III (a) (v) History of Religious Ideas—Vaishnavism, Saivism Jainism and Buddhism.

(Books and syllabus available in the old syllabus) Page. 28,29.

GROUP 'A'

Paper I (b) Medieval India (1526-1668) Political History and Administrative Institutions

1. Critical study of the source of the period.
2. Babar's achievements in India.
3. Mughal-Afghan and Mughal-Rajput Relations.
4. Mughal policy towards Western India, Central Asia and Deccan
5. Religious policy of the Mughals.
6. Development of Fudal Nobility and different factions at the Mughal court.
7. Land Revenue administration.
8. Theory of Sovereignty and Problem of Succession.
9. Military organisation and Mansabdari system.
10. Nature of Administration.

(Books as given in the previous syllabus).

Paper III (b) (i) Medieval Society, Religion, Art and Architecture.

(Syllabus and books available on old syllabus).

GROUP 'C'

Paper I (c) Modern India (1858-1919 A.D.).

(Paper and books available in the old syllabus).

Paper II (c) Modern India (1919-1950 A.D.).

(Paper and books available in the old syllabus).

Paper III (c) Modern India—Social and Economic History of Modern India.

(As already given in the old syllabus).

Paper IV (a) History of Ancient Indian Thought.

1. Vedic and Upanishadic Thought.
2. Lokayata, Sankhya, Jainism and Buddhism.
3. Gita, Mahabharata, Vaishnavism.
4. Dharmasastra Tradition with special reference to Manu and Yajnavalkya.
5. Arthasastra tradition with special reference to Kautilya. Literary Contribution of Kalidasa.

Books recommended :

1. P.V. Kane—History of Dharmasastra Vol. I and II.
2. B.S. Upodhaya—Indian Kalidasa (in Hindi also).
3. Hiriyana—Essentials of Indian Philosophy.
4. Hiriyana—Bhartiya Darshan Ki Roop Rekha.
5. R.G. Bhandarkar—Vaisnavism, Savism and other Minor Religious systems.
6. Cultural Hertiage of India Vol. IV (Ram Krishana Mission Culcutta).
7. U.N. Ghoshal—A History of Indian Political Ideas.

Paper IV (b) History of the Marathas-Shivaji to 3rd battle of Panipat

- (I) 1. Factors responsible for the rise of the Maratha Power.
2. Shivaji's relations with Bijapur and Golkunda.
 3. Shivaji's relations with the Mughals.

- (II) 1. Shivaji's Civil Military Administration.
2. Ideas and achievements of Shivaji.

- (III) 1. Marathas War of Independence (1680-1707) including the characters of Shambhaji. Rajaram and Tarabai.
2. An estimate of Sahu and succession of Raja Ram.
 3. Factors responsible for the rise of Peshwas and achievements of Balaji Vishvananth.
 4. Balaji Rao and expansion of Maratha Power.

- (IV) 1. Balaji Baji Rao : Activities in North and South.
2. Maratha-Nizam relations.
 3. Maratha's relations with Rajputs and Jats.
 4. Cause of the Third Battle of Panipat, Causes of Maratha defeat and consequences.

- (V) 1. Civil administration and source of revenue during the Peshwa period.
2. Military organisation under the Peshwas.
3. Chauth and Sardesmukhi.
4. Judicial administration.
5. Social and Economic condition of Maharashtra during the Peshwa period (1712-1761).
6. Concepts of Maharashtra Dharma and Hindu Pad-Padshai.

(Books as already given in the previous syllabus).

Paper IV (c) Sources of Rajasthan History :

Archaeological sources—Kali Banga and aber, study of Important Inscriptions. The Bijolia Inscriptions, the Kumbhalgarh inscription. The Chittor Inscription—Bikaner Inscription of Raj Singh—Raj Prashasti Mahakavya—Study of Archival Record Literary Sources for the study of History of Rajasthan—The Khyata, Vanshavalis—The Persiao sources Nainsi, Bankidas, Surya Maj Mish rand, Sculpture and Painting as a source of social history—Tod, Dayal Dasa Kaviraja, Shyamal Das and Dr. G.H. Ojha as Historians.

(Books as given in the old syllabus).

Paper IV (d) Indian National Movement and Thought.

1. The Indian Nationalist—Indian National Congress—The Moderates (Gopal Krishana Gokhale and Phiroz Shah Mehta).
2. The beginning of Radicalism—Contribution of Bal-gangadhar Tilak—The Swadeshi Movement—The Terrorists. Contribution of Moderate and Extremists to National Movement.
3. The Home Rule League. The Non Cooperation Movement, Khilafat Movement, Civil Disobedience Movement and the Quit India Movement.
8. The Muslim league is India—The Luknow Pact the Communal award. Mohd. Ali Jinnah—His role in the partition of India.
5. The Growth of Socialist and Communist Movements Pt. Jawahar Lal Nehru, Subhash Chandra Bose, Acharya Narendra Dev and Jai Prakash Narayan.

(Books as given in the old syllabus).

Paper V (a) Essay.

(as given in the previous syllabus Books as given in old syllabus).

Paper V (b) Meaning and Method of History.

(Paper and Books as given in old syllabus).

Paper V (c) Gandhian Thought.

(Books and Paper given in the old syllabus).

Paper V (d) History of Political Theory.

(Syllabus and Books available in old syllabus).
as smendment in 1983.

M.A. (History) ALTERNATIVE

Previous :—There shall be four papers; each paper shall be of 3 Hrs. duration carrying 100 Marks.

Paper I. Evolution of Indian Society and Thought.

Paper II. (i) History of Political Theory.

OR

(ii) History of Russia (1860-1945)

OR

(iii) History of USA (1960-1950)

OR

(iv) History of England (1815-1939)

OR

(v) History of Scientific Thought in Society.

Paper III. (i) History and Culture of Rajasthan
(Earliest times to 1200 AD)

OR

(ii) History and Culture of Rajasthan
(1200 AD—1743 AD)

OR

(iii) History and Culture of Rajasthan
(1743-1949) AD)

Paper IV. Either

(i) History of East Asia (1850-1960)

(ii) Modern World (1919-1965)

(iii) European History-I (1789-1870)

(iv) European History-II (1870-1945)

(v) Social and Economic History of Modern Europe.

Final

There shall be five papers—Each paper shall be of 3 hours duration carrying 100 marks each. The fifth

paper is common to all the groups. Candidates may offer any one of the groups A, B, C.

Group 'A' Ancient India

Paper I. History of Ancient Indian Sources, Problems and Interpretations (600 BC—78 AD)

Paper II. History of Ancient India : Sources, Problems and Interpretations (78 AD to 650 AD).

Paper III & IV—Any two of the following :—

- (i) History of Education Literature and Thought.
- (ii) History and Philosophy of Buddhism.
- (iii) History of Political Ideas and Institutions of Ancient India.
- (iv) Economic life and Institutions.
- (v) Indian Culture Abroad.
- (vi) History of Science and Technology.
- (vii) Epigraphy and Numismatics.
- (viii) Out line of Indian Archeaeology.
- (ix) Historical Geography.
- (x) Historical Geography.
- (xi) History of Religious—Ideas—Vaishnavism, Saivism Jainism and Buddhism.
- (xii) History of South India.
- (xiii) Social and Legal Ideas and Institutions.

Group 'B'

Paper I. Problems and Interpretations of the History of India. (1200–1526).

Paper II. Problems and Interpretations of the History of India. (1526–1740).

Paper III & IV—Any two of the following :—

- (i) Administrative and Political Institutions of Medieval India.
- (ii) Economic life and Institutions of Medieval India.
- (iii) Social and Religious life in Medieval India.
- (iv) Art and Architecture and Archaeology of Medieval India.
- (v) Historians of Medieval India.
- (vi) History of Science and Technology.

Group 'C' (Modern India)

Paper I. Problems and Interpretation of Indian History. (1756-1885).

Paper II. Problems and Interpretations of Indian History. (1885-1950).

With special reference to Nationalist Movement and Thought.

Paper III & IV—Any two of the following :

(i) Administrative and Constitutional Development.

(ii) Social and Economic History of India.

(iii) Modern Indian Thought. Ram Mohan to Nehru, excluding Gandhi.

(iv) Contemporary India.

(v) History of Peasant and Trade Unionist Movement in Modern India.

(vi) Growth of regional Literatures and Education.

(vii) Gandhian Thought.

(viii) History of Science and Technology.

Paper V—Common to all the group.

Either : (i) Theories and Methods of History.

or

(ii) Economic History of India.

ALTERNATIVE SCHEME

Detailed Syllabus of M.A. : Previous (History)

Paper I—Evolution of Indian Society and Thought.

Time : 3 Hrs. duration.

Maximum Marks 100

Syllabus and books given on pages 8 & 9 of the existing Syllabus.

Paper II—Any one of the following :

Either (i) History of Political Theory.

Time : 3 Hrs. duration.

Maximum Marks 100

Syllabus and books given on pages 61 and 62 in the old Syllabus. 1982 Edition

OR

(ii) History of Russia : (1860-1945) :

Reforms of Tsar Alexander II—Abolition of Serfdom, its result and effects. Domestic Policy of Tsar Alexander III and Nicolas II. Ideas of Herzen and the Narodniks their contribution to the revolutionary movement, Causes of their failure.

The emergence of Marxist ideology in Russia. Plecknov and Lenin's Contributions to the revolutionary movement. The Revolution of 1905 Causes and reasons for its failure. Failure of Representative Government in Russia.

Foreign Policy of Tsarist Russia. The Berlin Congress. Relations with Germany, the France Russian alliance. Policy towards Iran and Afghanistan. Rivalry with Britain. The Anglo-Russian Convention of 1907.

Russia in the Far East Russia-Japanese War. Russian diplomacy on the eve of the First World War. The February and October revolution of 1917. Lenin's role and Ideas.

Lenin's New economic Policy, Stalin and his policies. New Constitution of Soviet Union (1936). Soviet Foreign Policy and II World War.

Books given on page 14 and 15 in the old Syllabus.

OR

(iii) History of USA (1860-1950)

Time : 3 Hrs. duration.

Maximum Marks 100

The Civil War and its results—Reconstruction Economic Revolution and Populist Movement.

Americal Imperialism (Mckenley and Theodore Roosevelt).

Spanish—Americal War—U.S.A's Carribean and Latin Americal Policy. Open door Policy.

The World War I and its aftermath—Nautrality, Americal entry into War—Wilsen and Paris Peace Settlement Hoover and Economic Depression.

Franklin D. Roosevelt—The New deal—Roosevelt's Foreign Policy including the Latin American Policy. American entry into the Second World War—American Diplomacy upto 1950. Truman Doctrine and Cold War. Books given on pages 15-16 in the old Syllbus.

OR

(iv) History of England (1815-1939)

Time : 3 Hrs. duration,

Maximum Marks 100.

Growth of Democracy—Reform Acts of 1832, 1867 and 1874. Women Suffrage the movement.

Growth of Liberalism and Free Trade—Chartism, Co-operation movement, Peel and Gladstone.

Growth of Imperialism—Palmerston, Disraeli, Imperialism in Africa.

British Colonial Policy Durham Report, British North America Act—Policy of Joseph Chamberlain. Growth of socialist Ideas and Trade Union movement, Birth and growth of Labour Party. Prelude to World War—Anglo-French, Anglo Russian and Anglo German Relations.

Edwardian Liberalism and the Parliamentary Act of 1911. Foreign policy during the Inter-War period. Emergence of the labour party.

Books as given on page 16-17 in the Syllabus.

V—History of Scientific Thought in Society.

Note :—The emphasis will not be biographical notes or technical developments. The emphasis will be on the social role of fundamental scientific ideas and inventions.

1. Science and Myths; Invention of agriculture and pottery in Neolithic Age, Discovery of metals and birth of civilization.
2. State of scientific ideas in archaic civilizations (Egypt and Mesopotamia)—Beginning of astronomical observations and their impact on society, Development of calendar, state of mensuration and writing, impact of religion on medicine.
3. Greek Rationalism, Beginning of Theoretical Science—Achievements in field of Astronomy, Mathematics and Medicine with reference to Pythagoras, Aristotle, Euclid and Eipparchus Archemedes, Ptolemy, Hippocrates.
4. Hindu Achievements, Character of Indian Mathematics (Arithmetics and Algebra) Greek influence and Vedic Astronomy, Contributions of Varahamihira Aryabhata, Bramhagupta.

5. Role of Arabs, Culmination of Mesopotemian, Greek and Indian Mathematics—Islamic medicine—optics, Achievements of Middle Ages and the Renaissance : Question of faith and Reason.
6. Scientific Revolution—Copernicus, Galileo, Newton.

Books for reference :

- C. Singer—From Magic to Science.
 J.G. Crowther—The Social Relations of Science.
 John Losee—Historical Introduction to the Philosophy of Science.
 J.D. Bernal—Science in History (Vol. I to IV)
 George Sarton—A history of Science.
 B. Barrington—Science in Antiquity.
 Marshall Clagett—Greek Science in Antiquity.
 Bose, Ray and Subrayyapa—Concise History of Indian Science.
 S.N. Dasgupta—History of Indian Philosophy. (Relevant portions).
 Satya Prakash :
 Gorakh Prasad :
 Rene Taton (Ed) Ancient and Medieval Science.
 H. Kearney—Origins of the Scientific Revolutions.

Paper III—

Either (i) History and Culture of Rajasthan.
 (Earliest times to 1200 AD)

Time : 3 hours duration Maximum Marks 100
 Syllabus and books given on page 21-22 in the old Syllabus.

OR

(ii) History and Culture of Rajasthan.
 (1200 A.D.—1743 A.D.)

Time : 3 hrs. duration. Maximum Marks. 100
 Syllabus and books as given on Page 23-24 in the Syllabus.

OR

(iii) History and Culture of Rajasthan.
 (1743—1949)

Time : 3 hours duration Maximum marks 100
 Syllabus and books as given on Page 24-25 in the old Syllabus.

Paper IV :

(i) History of East Asia (1850-1960) :

Time : 3 hrs. duration

Max. Marks 400

- (i) The opening of China—The opium war. Taiping rebellion. Scramble for China, Rise of Nationalism in China. The Chinese Revolution. Role of Sun-Yat-sen. His ideas.
- (ii) Chiang Kai-Shek's leadership. Split in Komin-Tang Party. China's Anti-Communist Policy and his failure. Japanese Invasion of Manchuria.
- (iii) Rise of Communism in China. Communists Programme Long March. Consolidation of Communist in North West China and World War II, Civil War in China. Victory of Communists and establishment of the People's Republic of China. Mao-Tse-Tung's idea and role.
- (iv) Japan's contact with the West. Western intervention, Revolution of 1867. Abolition of Shogunate of Meiji Restoration. Political Awakening. Modernisation of Japan.
- (v) Emergence of Japan as a World Power, Sino-Japanese War's Russo-Japanese War, 1905, World War I Japan and Washington Conference. Imperialist Japan and the World War II, Manchurian Crisis. Japanese attack on China. Attack on Pearl Harbour. Second World War and the Japanese defeat and surrender in 1945.
- (vi) Colonialism and national Liberation Struggle in Indonesia, Malaysia and Indo-China.

Books given on page 13 in the Syllabus.

(ii) Modern World (1919-1965) :

Time : 3 hrs. duration

Max. Marks 100

Syllabus and books as given on page 9, 10 of the existing syllabus.

(iii) European History I (1789—1870) :

Time : 3 hrs. duration

Max. Marks 100

- (i) The ancien régime—Its nature—the Philosophers and their rule. Social and Economics forces behind the Revolution.
- (ii) The rise of Jacobinism—Thermidorian reaction and the Direction.

- (iii) Rise of Napoleon—His domestic and foreign Policies—the Continental system role of socio-economic forces in his failure estimate of Napoleon's work. Vienna Congress and its work.
- (iv) The age of Metternich—Clash between conservative and liberal forces.
- (v) National unification movements in Italy & Germany. Foreign Policy of Napoleon III, Eastern question during the period.

Books as given on page 10 in the Syllabus.

(iv) European History II (1870—1945) :

Time : 3 hrs. duration

Max. Marks 100

- (i) Foreign and Home Policy of Bismark and William II Russo-German relations. The Policy of Walt Politic Moroccan crisis.
- (ii) Third French Republis with special reference to Church and State and Foreign Policy.
- (iii) Circumstances leading to the First World War, the question of Warguilt.
- (iv) Russian Revolution (1917).
- (v) European Imperialism in the North Africa and the Far East.
- (vi) Eastern question—Congress of Berlin and Balkan Crisis.
- (vii) Treaty of Veraailles, Leagure of Nations—French Search for security, Rise of Fascism & Nazism, Lening his new economic Policy.

Books as given on page 10 in the Syllabus.

(v) Social and Economic History of Europe—a study of main trends.

Time : 3 hrs. duration

Max. Marks 100

- (i) Age of Mercantilism—Agricultural & Industrial, Revolution in Western Europe 17th to 19th Centry.
- (ii) Growth of Liberalism in England—Development of Capitalism and Industrialisation in Western Europe, Imperialism and Colonial struggle in 19th & 20th Centries with reference to Egypt, Indonesia, Malasiya & Indo-China
- (iii) The Growth of population and urbanisation in Europe, their rise of the working class movement in England, Economic Consequences of the First World War, Depression of 1929—1931.

Books :

- (i) The Cambridge Economic History of Europe Vol. (vi) pt. II.
- (ii) The Economic Development of Western Civilisation by Shepherd B. Clogh.
- (iii) Imperialism & Colonialism by George H. Nadel & Pretty Curtis (Macmillan 1964).
- (iv) France & The Economic Development of Europe by Ronodo E. Camerson (Princeton).

Alternative Scheme

Detailed Syllabus of M.A. Final (History)

Group 'A' (Ancient India)

Paper I—History of Ancient Indian Sources, Problems and Interpretation (600 BC-78 AD) :

Time : 3 hrs. duration Max. Marks 100
Syllabus and books as given on pages 27 & 28 in the Syllabus.

Paper II—History of Ancient India, sources, problems and interpretations (78 AD—65 AD):

Time : 3 hours duration Max. Marks 100
Syllabus and books as given on page 29 & 30 in the Syllabus.

Paper III & IV—Any two of the following :

(i) History of Education Literature and Thought.

Time : 3 hrs. duration Max. Marks 100
Syllabus and books as given on page 30 in the existing Syllabus.

(ii) History of Philosophy of Buddhism.

Time : 3 hrs. duration Max Marks 100
Syllabus and books as given on page 30 in the existing Syllabus.

(iii) History of Political Ideas and Institutions of Ancient India.

Time : hrs. duration Max. Marks 100
Syllabus and books as given on page 31 in the existing Syllabus.

(iv) Economic life and Institutes.

Time :—3 hrs duration Maximum Marks 100
Syllabus and books as given on page 31 & 32 in the existing Syllabus.

(v) Indian Culture Abroad.

Time :—3 hrs. duration

Maximum Marks 100

Syllabus and books as given on page 33 in the existing Syllabus.

(vi) History of Science and Technology.

Time :—3 hrs. duration

Maximum Marks 100

Syllabus and books as given on page 34 & 35 the existing Syllabus.

(vii) Epigraphy and Numismatics

Time :—3 hrs. duration

Maximum Marks 100

Syllabus and books as given on page 35 & 36 in the existing Syllabus.

(viii) Outline of Indian Archaeology.

Time :—3 hrs. duration

Maximum Marks 100

(i) The student shall be expected to do field/practical work/excursions to archaeological sites and Museums.

(ii) The students will be expected to answer 5 questions selecting atleast one each from sections A & B and two questions from section 'C'.

Section A :—Theories Methods of Field Archaeology.

Concepts of Archaeology; Archaeology in relation to other social natural and pure science, exploration Lay-out, Excavation, Stratigraphy, Recording and Dating.

Section B :—Outline of Indian Prehistory.

Salient features of various stone Ages (Lower, Middle. Upper Palaeolithic, Mesolithic & Neolithic) with reference to distribution, tool-type, techniques, ecology and life of the people.

Section C :—Protohistoric & Early Historical Archaeology.

(i) (Preharappan chalcolithic Culture of Baluchistan, Singh and North, Western India.

(ii) Harappan and Late Harappan civilization : salient features, origin and authorship, extent, chronology, survival & continuity.

(iii) Post Harappan Culture sequence in Northern India : Problems pertaining to O.C.P. & Copper Hoards, Black and Red Ware P.G.W. and N.B.P. ware Cultures—a brief survey.

(iv) Post Harappan Culture—Sequence in the Deccan and South Megalith Types and related material culture.

Books recommended :

- (a) Sheeler, R.E.M.—Archaeology from the Earth, Penguin Books Early Indian and Pakistan. London, 1959.
The Indus civilization, 3rd edition, 1968. Supplement to Cambridge History of India.
- (b) Sankalia, H. D.—Pre-History, and protohistory of India & Pakistan, second edition, Poona, 1974.
- (c) Allchin, F. R. & B.—The Birth of India Civilization, 1968.
- (d) Fairservis, W.A. Jr.—The Roots of Ancient India. New York, 1971.
- (e) Sankalis, H.D :—Stone Age Tools, Poona, 1964.
- (f) Sinha, B.P. (ed) : Poyyrtird in Ancient India, Patna.
- (g) Agrawal, D.P. :—The copper & Bronze Age in India.
 - (i) Indian Archaeology—A Review—New Delhi, relevant portions.
 - (ii) Ancient India, New Delhi relevant portions.
 - (iii) Puratattva (Bullet in of the Indian Archaeological Society) relevant articles specially No. 5.

(ix) Ancient Art Architecture.

Time :—3 hrs. duration

Maximum Marks : 100

Syllabus and books as given on page 33 & 34 in the existing Syllabus.

(x) Historical Geography.

Time :—3 hrs. duration

Maximum Marks : 100

Syllabus and books as given on page 40 & 41 in the existing Syllabus.

(xi) History of Religious Ideas-Vaishnavism, Saivism, Jainism and Buddhism.

Time :—3 hrs. duration

Maximum Marks : 100

Syllabus and books as given on page 41 in the existing Syllabus.

(xiii) History of South India (600—1300 AD.)

Time :—3 hrs duration

Maximum Marks : 100

Syllabus and books as given on page 26 & 27 in the existing Syllabus.

(xiii) Social and Legal Ideas and Institutions.

Time :—3 hrs. duration

Maximum Marks : 100

Origin & Development of the Varna and Caste. Varna-Sankara, Position of Sudras. Ashramas, Institution of marriage. Position of Women. Concept and sources of Law, Salient features of Judicial organisation. Law of Inheritance (Daiva), Property rights of women, concept of Stridhana.

Books :

- Prabu, P.N. : Hindu Social Organisation.
 Churye G.S. : Caste, Class & Occupation.
 B.N.S. Yadav : Social & Economics Life in Northern India.
 L. Gopal : Social & Economic Life of Northern India.
 Cultural Heritage of India, Vols. I to IV (Relevant Chapters).
 Kane, P.V. : History of Dharmshastras.
 Narendra Wagle : Society in the time Buddha.
 T.W. Rhys Davis : Hindu Law & Customs.
 Jally : Hindu Law & Customs.
 R.B. Pandey : Hindu Samskaras.

Group 'B'

Paper I—Problems and Interpretations of the History of India.
 (1200—1526) :

Time :—3 hrs. duration

Maximum Marks : 100

Syllabus and books as given on page 41 & 42 in the existing Syllabus.

Paper II—Problems and Interpretations of the History of India.
 (1526-1740). .

Time :—3 hrs. duration

Maximum Marks : 100

Syllabus and books as given on page 42—44 in the existing Syllabus.

Paper III & IV—Any two of the following :

(i) Administrative and Political Institutions of Medieval India,

Time : 3 hrs. duration

Maximum Marks : 100

Syllabus and books as given on page 44 & 45 in the existing Syllabus.

Paper III & IV—(ii) Economic Life & Institutions in Medieval India.

Rural Life—Agricultural Production and the problem of the ownership of agrarian land—irrigation system—rural handicrafts—village community and their inter-relations.

Urban Life—Urban Industries—Urbanisation and Urban trade centres—Markets—Weights and measures—currency and banking—standard of life of the different social classes.

Trade and Commerce —External trade—Internal trade—Trade routes means of transport and communication—Custom and transit dues the state in relation to trade—important sea ports of India.

Economic Institutions —The land revenue system—Iqts system—Jagirdari system—The Ijara system.

Books Recommended :

1. W.H. Moreland : The agrarian system of Muslim India.
2. W.H. Moreland : India at the Death of Akbar.
3. W.H. Moreland : India from Akbar to Aurengazab.
4. K.M. Ashraf : Life and conditions of the people of Hindustan (Also in Hindi).
5. Irfan Habib : The agrarian system of Mughals.
6. S.S. Kulshreshtha : Development of trade and industry under the Mughals.
7. D. Pant : Commerical policy of the Mughals.
8. Chichero : India Economic Development in the 16-18th Centuries.
9. J.N. Sarkar : Economic life of Mughal India.
10. Noman Ahmad Siddiqi : Land Revenue Administration under the Mughals.
11. Brij Narain : Indian Economic Life—Past and present.
12. H.K. Naqvi : Urban Centres and Industries in Upper India (1556-1803 AD).
13. H.K. Naqvi : Urbanisation and Urban Centres under the Great Mughals.

(iii) Social and Religious life in Medieval INDIA.

Time : 3 hrs. duration

Maximum Marks 100

Syllabus and books as given on page 48 & 49 in the existing syllabus.

(iv) Art and Architecture and Archaeology of Medieval India.

Time : 3 hrs. duration Maximum Marks 100

Syllabus and books as given on page 49 in the existing Syllabus.

(v) Historian of Medieval India.

Time : 3 hrs. duration Maximum marks 100

Syllabus and books as given on page 50 & 51 in the existing Syllabus.

(vi) History of Science and Technology.

Time : 3 hrs. duration Maximum marks. 100

Syllabus and books as given on page 34 & 35 in the existing Syllabus.

Group C—(Modern India) :

Paper I—Problems & Interpretation of Indian History (1756-1885).

1. Establishment of British Rule in Bengal—1751-1772. Maratha affairs and the role of Mahadaji & Nana Phadnavis—Failure of the Marathas.
2. Rise of Sikh in the later half of the 18th century—Ranjit Singh's achievements—Sikh wars and annexation of Punjab.
3. British policy towards the Indian States—various stages—Annexation of Awadh and Growth of Paramountcy (Up to 1885),
4. Civil Rebellion during British Rule—Outbreak of 1857—its nature. Aftermath of the out-break.
5. Liberal and conservative trends in British Indian administration 1858-1884.
6. Frontier policy—Northern and North-Western policy upto 2nd Afghan War.

Books recommended :

1. R.C. Majumdar—British Paramountcy and India Renaissance. Bhartiya Vidya Bhawan's 'History' and Culture of the Indian people, Bombay—1965.
2. Prasad B.—Bondage and Freedom Vol. I 1757—1858.
3. Sardesai G.S.—Main currents of Maratha History.
4. Sinha N.K.—Ranjit Singh.
5. Choudhary S.B.—Theories of the Indian Mutiny.
6. Choudhary S.B.—Civil Rebellion in India during 1857—58.

7. Prasad S.N.—Paramountcy under Dalhousie.
8. Sheikh Ali B.—Haider Ali
9. M.S. Mehta —Lord Hastings and India States.
10. Dilks David—Curzon in India, 2 Vol. London—1969.
11. Swintou Arthur—North West Frontier 1839-1917 London—1967.
12. Gopal S.—The Viceroyalty and Lord Ripon—1880-1848 London 1953.
13. Gopal S.—British Policy in India, Camb 1965.
14. Philips C.H. (ed.)—The Evolution of India—1858-1947)
15. Moore Charles—Liberalism and India.
16. Jain M.S —The Aligarh Movement.

Paper II—Problems and Interpretation of History of India 1858–1947 with Special Reference to Nationalist movement and Thought.

1. Social forces and Indian Nationalism—Origin and establishment of Indian National Congress. Contribution of S.N. Banerjee and Gokhale.
2. The birth of the Extremist Movement—Role of Tilak and Lala Lajpat Rai—the terrorists and the Revolutionaries—Home Rule Movement—British attitude to Indian Nationalism—The social base of Nationalism.
3. Non-Cooperation and Civil Disobedience Movements. The Swarajists and their contribution—The Round Table Conferences and the idea of federation.
4. Political consciousness among the Muslims—Aligarh Movement—Muslim league, the transformation and role after 1937.
5. Nationalist Movement after 1937—Quit India Movement—Cabinet Mission Plan, and Indian Independence 1947. Problem of Indian States—Lapse of Paramountcy.

Books recommended :

- | | |
|------------------|---|
| 1. Heimsath C.H. | : Indian Nationalism and Hindu Social Reform. |
| 2. Seal, Anil | : Indian National Evolution. |
| 3. Tripathi A. | : The Extremist Challenge. |
| 4. Argov D. | : Moderates and Extremists. |
| 5. Wolpert | : Tilak, Gokhale. |
| 6. R.C. Majumdar | : History of Freedom Movement in India (Vol. I to IV) Hindi also. |

7. Jain M.S. : The Aligarh Movement.
8. Robinson : Separatism among the Indian Muslims.
9. Ram Gopal : Indian Politics (in Hindi also).
10. Mehrotra S.R. : Emergence of Indian National Congress.
11. Brown J.M. : Gandhi's rise to power in Indian Politics 1915-1922.
12. Menon V.P. : The transfer of power in India.
13. Philis CH & MD : The partition of India (1935-47).
Wainwright (ed.)
14. Hudson H.V. : The Great Divide.

Paper III & IV—Administrative and Constitutional History of Modern India.

Section 'A'—Growth of administrative system during—1772-1833.
Judicial system and its impact :

Recruitment to Civil Services—Indianisation Process—Administrative decentralisation—Bureaucracy and its role.

Section 'B'—Growth of legislative councils—1853-1909. Govt. of India Acts (1919-1935—Dynesty and Provisional Authority.)

Cabinet Mission Plan, Constituent Assembly and the constitution of 1950.

Books Recommended :

1. B.M. Mishra : Administrative History of India.
2. B. Prasad : Origins of Provincial Autonomy.
3. C.H. Philips : Evolution of India and Pakistan, 1858-1947.
4. B.N. Pandey : Introduction of English Law in India.
5. Coupland : The Constitutional Problem.
6. A.B. Keith : Constitutional History in India.
7. M.V. Pylee : Constitutional Government of India.
8. Courtneyllbert : Government of India
9. VCP Choudhary : Administration of Lord Lytton.
10. H.L. Singh : Problem and Policies.
11. Spangenberg : British Bureaucracy in India.

Paper III & IV—

(ii) Social and Economic History of India

Time :—3 hrs. duration

Maximum Marks : 100

1. Indian Society in Mid-18th century—Introduction of English Legal System and its impact—Role of Caristian Missionaries. Social Mobility and rise of Middle Classes Social Reforms—movement and its impact—Social Legislation Upliftment of Depressed classes.
2. (a) Destruction of cottage Industries—Main features permanent, Ryatwari and Mahalwari-settlements and their impact.
(b) Railways and Industrialisation—Policy of free trade and protection, and Drain of Wealth and its implication—peasant movements and trade Unionism.
(c) Peasant movements and trade unionism.

Books Recommended :

1. Gadgil D.R. Industrial Evolution of India in recent times.
2. Datta R.C. Economic History of India Vols. I & II.
3. Ganguli B.N. Modern Indian Economic Thought.
4. Guha, Ranjit A Rule of Property for Bengal.
5. Mishra B.B. The Indian Middle Classes.
6. Desai A.R. Social Background of Indian Nationalism.
7. Sinha, N.K. Economic History of Bengal, Vols. I, II & III.
8. Natrajan, S. A Century of Social Reforms in India.
9. O'Malley, LSS (ed) Modern India and the West.

Modern Indian Thought Ram Mohan To Nehru,
Excluding Gandhi

Time :—3 hrs. duration

Maximum Marks : 100

Ram Mohan, Dayanand Saraswati, Soyyid Ahmed Khan,
Gokhale, Tilak, Aurohindo, Lala Lajpat Rai.

Sri Mohammad Iqbal, J.P. Narayan and Nehru.

Books Recommended

- | | |
|-------------------|---|
| 1. Joshi V.C (ed) | Rammohan and process of Modernization, New Delhi 1975. |
| 2. Majumdar B.B. | History of Political Thought from Ram Mohan to Dayanand |
| 3. Appadorai (ed) | Documents on Political Thought in Modern India, Vols, I & II. |
| 4. Jain M.S. | Adhunik Bharat Men Muslim Rajnitik Vichar. |
| 5. Paravate | Gokhale. |
| 6. Verma. V.P. | Modern Indian Political Thought (in Hindi also) |
| 7. Wolpeart S. | Tilak and Gokhale. |
| 8. Prasad Ganesh | Nehru : A Study in Liberal Humanism. |
| 9. Nanda B.R. | The Nehru : Jawaharalal Nehru. |
| 10. M.N. Das | The Political Philosophy of Jawahar lal Nehru. |
| 11. J.P. Narain | Towards Struggle. |

IV. Contemporary India. (1945-72)

1. Cabinet Mission Plan and the working of the Constituent Assembly—Constitution of 1950 and its amendments upto 1972.
2. The problem of rehabilitation in the wake of partition—process of National Integration—Indian States merger and Reorganisation of 1956—Linguistic and Regional strains.
3. Development of Political parties & pressure groups—Broad survey of Land Reforms—Growth of national education policy—upliftment of backward classes and women. Salient features of First Four 5 year plans with reference to agriculture and Industry.

India's foreign policy—Non-alignment and relations with Pakistan, China, UNO, Afro-Asian countries.

Books :

- | | |
|--------------|--|
| Gadgil | : Planning and Economic Policy in India. |
| Mukerjee; B. | : Community Development of India. |
| Mishra, K.P. | : Readings in Indian Foreign Policy. |
| Karuna Karan | : India in World Affairs (1957-60). |

Kundra, J.C.	: Indian Foreign Policy, 1947-74.
Nehru, Jawahar Lal	: India's Foreign Policy, 1961.
Myron Weiner	: Party Building in a New State.
Alexandrowcz	: Constitutional Developments in India.
Iqbal Narayan	: State Politics in India, 1967.
Rajni Kothari	: Politics in India.
Brecher	: Indian and World Politics. Education Commission Reports.
M.N. Srinivas	: Social Change in Modern India.
Morris Jones	: Government & Politics of India.
Hodson, H.V.	: The Great Divide.
Phillips C H. (ed)	: Transfer of Power.

V. History of Peasant and Trade Unionist Movement in Modern India.

Time : 3 Hrs. duration.

Max. Marks : 100

1. J.S. Mathur : Bhartiya Shramik Varg Andolan.
2. Desai : Peasant Struggles in India.
3. Sunil Sen : Peasant Movements in India.
4. Sukonel Sen : Working Class of India.
5. D. N. Dhangare : Agrarian Movement & Gandhian Politics.

VI. Growth of Regional Literature and Education

Time : 3 hrs. duration

Max. Marks : 100

1. Naik, J.P. : History of Indian Education.
2. Shukla, Ram Chandra : Hindi Sahitya Ka Itihas.
3. Nagar Pracharani Sabha Publication: Hindi Sahitya Ka Vrahat Itihas Vol. XI to XIV.
4. Bacchan Singh : Adhunik Hindi Sahitya Ka Itihas.
5. Dr. Sushil Kumar : History of Bengali Literature.
6. Hunter Education Commission and Radhakrishnan Education Commission Reports.
7. Sen, Sukumar : A History of Bengali Literature (in Hindi also).
8. Gupta, Arulchandra : Studies in the Bengal Renais—sance.
9. S. Natarajan : History of Present India.

VII Gandhian Thought.

Time : 3hrs.

Max. Marks 100

1. J. Bandopadhyaya : Social & Political Thoughts
2. B.N. Gangoli : Gandhi's Social Philosophy.
3. Jha : Civil Disobedience and After
4. Judeth Brown : Gandhi's Rise to Power.
5. Gandhi : Satyagraha.
6. T.K. Mahadovan : Truth of Non-Violence.
7. Erik H. Erikson : Gandhi's Truth.
8. John Bondurant : The Conquest of Violence.

VIII History of Science and Technology.

Time : 3 hrs. duration

Max. Marks : 100.

Syllabus and books as given on pages 34 and 35 in the existing Syllabus.

Paper V

Common to all the groups.

Time 3 hrs duration

Max. Marks : 100

Either (i)

Theories and Methods of History.

Books and Syllabus given on page 60-61 of the earlier Syllabus.

Or (II) Economic History of India.

1. Land ownership and rural economy. Industrial organisation—trade and commerce—Guild (System and state enterprises).

2. Feudal System—Working of the land Revenue System in Medieval times—Jagirdari system. trade & commerce, urbanisation and industrial progress.

3. Land Revenue settlements—Impact of free trade—Beginning of Industrialisation—Drain of wealth—Tariff Policy & attitude to protection—Rural Indebtedness and famines.

Books.

- | | | |
|-----------------|---|--|
| Maity. S.K. | : | The Economic Life of Northern India, Second edition. |
| Gopal L | : | Economic life of Northern India (700-1200 AD) |
| Srivastava, B. | : | Trade & Commerce in Ancient India. |
| Majumdar, R.C. | : | Corporate Life in Ancient India (Also in Hindi) |
| Das. S.K. | : | Economic History of ancient India : 1928. |
| Chakravarty, A. | : | Trade and Commerce of ancient India. |

- W.H. Moreland : The Agrarian system of Moslim India.
- Iffan Habib : The Agrarian system of Mughals.
- S.S. Kulshresta : Development of Trade and Industry under the Mughals.
- Chicherov : India-economic development in the 16-18th Centureis.
- J.N. Sarker : Economic life of Mughal India.
- D. Pant : Commercial Policy of the Mughals.
- H.K. Naqvi : Urban Centres and Industries under the Great Mughals.
- Gadgil, D.R. : Industrial Evolution of India in recent times
- Datta, R.C. : Economic History of ndia Vols. I & II.
- Naroji. Dadabhai : Poverty and Un-Britist Rule in India.
- Ganguli, B.N. : Modern Indian Economic Thought.
- Bhatia, B M. : Famines in India : A study in some aspects of the Economic History of India, 1860-1945. London, 1963.
- Guba Ranjit : A Rule of Property for Bengal.
- Sinha, N.K. : Economic History of Bengal, Vol. I, II & III.
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MINUTES OF THE MEETING OF THE COMMITTEE OF
COURSES IN MODERN EUROPEAN LANGUAGES, HELD
ON 15/16 DECEMBER, 1983, AT 12.00 NOON IN THE
VICE-CHANCELLOR'S SECRETARIAT, UNIVERSITY
CAMPUS, JAIPUR.

Present :

1. Dr. (Mrs.) Pawan Surana *Convener*
2. Dr. L.K. Das
3. Shri G.N. Prasad
4. Shri P.K. Sethi

Dr. J.P. Dimari (an external member) could not attend the meeting.

1. Under section 24 E (8) of the University Act the Committee appointed Dr. (Mrs.) Pawan Surana, Univ. Reader (Associate Professor) in German Language, University Department of Modern European Languages, Jaipur as Convener, for fresh term of Three Years.

2. The Committee scrutinized the statement of qualification and teaching experience etc. of teachers received from the University teaching Departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners in terms of clause 2 (a) of Statute 25 of the University Hand Book Pt. II.

3. The Committee discussed report of examiners and question papers set and offered comments as under :—

(a) Certificate in German. The first paper (Translation) was so lengthy that no students could finish that. Instructions shall be given to set question keeping in view the time given to the students.

(b) Diploma in French, Paper II, (Translation). The remarks of J. Biswas (Allahabad University) seems to be irresponsible one, when the percentage of passes is 100%. The candidates who passed the Examination is 100%.

4. The Committee recommended the courses of study and text books in the subject for the following examinations together with

the relevant addition and/or alterations of the Ordinances and Regulations :

(i) Degree Examinations :

- (a) First Year T.D.C. (Pass) Course Examination 1986—No change.
- (b) Second Year T.D.C. (Pass) Examination 1986—No change.
- (c) Third Year T.D.C. (Pass) Examination 1986—No change.

(ii) Diploma Examinations :

- | | |
|--|-------------------|
| (a) Certificate Course Examination, 1986 | } As per appendix |
| (b) Diploma Examination, 1986 | |
| (c) Post Diploma Examination, 1986 | |

5. The Committee recommended immediate opening of the Advance Diploma course in all the three Languages. The Courses have already been approved by the Academic Council. It would not be out of place to mention here the fact that external examiners are seeking the performance, have also strongly recommended for the higher courses.

6. The Committee further suggested for the introduction of the Foreign Languages as one of the combination in three year degree course.

7. The Committee again recommends for the Moderation of question papers before sending them to the press. This moderation provision is in practice almost in all the Universities.

8. The Committee noted the contents of the letter No. F. 3-29/80/(CD), dated 18-2-83/9-3-1983, received from the U. G. C. New Delhi.

9. The Committee also noted the letter No. F 4-19/82 (ER) dated 19-1-1983 received from U. G. C., New Delhi regarding instructing the courses of study.

10. The Committee is in the view that the remuneration for setting of question papers and evaluating the Answer books should be increased.

The meeting ended with a vote of thanks to the Chair.

(Dr. (Mrs.) Pawan Surana)
Convener,
 C.O.C. in Modern European
 Languages.

APPENDIX I

MODERN EUROPEAN LANGUAGE EXAMINATION

Certificate, Diploma, Post-Diploma

R.—12 A.

First Year Examination in Russian/German/French Languages

There will be two written papers each of two hours duration. A candidate will be required for a pass to secure minimum of 40 percent in each paper and 50 marks in the aggregate.

Successful candidates will be classified in these categories :

- | | |
|----------------------|---|
| (a) Pass | Those securing 50% or more marks but less than 75% marks. |
| (b) Pass with Credit | Those securing 75% or more marks but less than 90%. |
| (c) Pass with Hons. | Those securing 90% or more marks. |

MODERN EUROPEAN LANGUAGE EXAMINATION

(German)

First Year Examination :
(Certificate Course)

Paper I—(Two Hours)

(a) Translation from German to English or Hindi	30 marks
(b) Translation from English or Hindi to German.	20 marks
(c) Dictation (Half an Hour)	30 marks
Total	<hr/> 80 marks <hr/>

Paper II—(Two Hours) :

(a) Grammar	40 marks
(b) German Text to sum up	25 marks
(c) Questions from the text	15 marks

Note :—Unseen Passage for summary and Translation must be based on the vocabulary taught in the text.

Total	<hr/> 80 marks <hr/>
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Paper III—Viva-voce

(a) Viva-voce

40 marks

Grand Total

200 marks

IInd Year Examination :—

(*Diploma Course*)

Paper I—(Three Hours)

70 marks

(a) Translation from German
to English or Hindi

40 marks

(b) Translation from English
into German.

30 marks

70 marks

(Passages are unseen, dictionary is allowed).

Paper II—Grammar

60 marks

Total

60 marks

Paper III—(Three Hours) :

50 marks

(a) Essay (about 250 words)
(one topic to be selected
out of five)

(b) Questions from the given Text

20 marks

Total

70 marks

Paper IV—Viva-voce

100 marks

Grand Total

300 marks

Text Books Prescribed :

1. Deutsche Sprachlehre fuer Auslaender von Schulz—Griesbach (page 1-101 for Certificate course).
2. Deutsche—Sprachlehre fuer Auslaender von Schulz—Griesbach (Page 108-208 for Diploma Course).

Books recommended :—

- (a) Deutsch als Fremdsprache I von Braun—Nieder-Schmoe.

- (b) Deutsch als Fremdsprache II von Braun—Nieder—Schmoe.
- (c) Im Wandel der Jahre von Harold von Hofe.
- (d) Deutsch 2000 (1).
- (e) Deutsch 2000 (2).
- (f) Wir lesen Deutsch von Schroeder/Kirchhoff I. Teil
- (g) Wir lesen Deutsch von Schroeder/Kirchhoff Teil II.
- (h) Deutsch Aktiv Part I + Part II.

POST DIPLOMA COURSE IN GERMAN

Paper I :—Translation (three hours—Duration) :—

1. Translation from German into English or Hindi	60 marks
2. Translation from English into German.	40 marks
Total	<u>100 marks</u>

Paper II—Literature—(three hours—Duration) :—

1. Explanation of prescribed German Poem in simple German and questions on the poem.	30 marks
2. Two Questions out of four given questions on the prescribed play (20 marks each).	40 marks
3. Questions from given text of one of the prescribed short stories.	30 marks
Total	<u>100 marks</u>

Paper III—(Three hours duration) :

1. Unseen Passage and its summary and of question on above passage.	25 marks
2. Two Questions to be answered on History of German Literature out of four given Questions (To be answered in German or in Hindi or in English).	25 marks
3. Grammar	50 marks
Total Marks	<u>100 marks</u>

Paper IV—Viva-voce

100 marks

1. Unseen Passage and its summary and questions on given text.
2. Conversation including question on Grammar Literature and Culture etc.

Total	100 marks
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Grand Total	400 marks
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Books Prescribed :

1. Deutsche Erzählungen von Klier/Martin (Teil).
2. Biedermann und die Brandstifter—Max Frisch.
3. Gedichte :
 - (i) Drei Ringe—Lessing.
 - (ii) Abendlied—Matthias Claudius.
 - (iii) Wanderers Nachtlid—Wolfgang Von Goethe.
 - (iv) Die Burgschaft—Friedrich von Schiller.
 - (v) Mordnacht—Joseph von Eichendorff.
 - (vi) Lorelei—Heinrich Heine.
 - (vii) Der Vogel—Wilhelm Busch.

Books recommended :

- (i) Aus deutscher Dichtung.
- (ii) Deutsche Gegenwart.
- (iii) Begegnung mit Deutschland—by Blohm/Kopke.
- (iv) Grammatik der deutschen Sprache by Schulz—Griesbach.
- (v) Erzählung und Gedichte—Hans Eicke.
- (vi) History of German Literature by Werner Friedrich.
- (vii) Deutsche Literature Geschichte by Fritz Martini
- (viii) Deutsche Grammatik—Duden.
- (ix) Deutsche Grammatik—Faer Auslander.

FRENCH

First year Examination (Certificate course in French) :—

Paper I—(2 Hours) :

Full marks 80

- | | |
|---|----|
| (i) Translation from French to English
(from the text) | 24 |
| (ii) Translation from English to French
(from the text). | 24 |
| (iii) Grammar | 32 |

Total	80
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Paper II—(2 Hours)	Full marks	80
Part I—(1½ Hours)		
(i) Questions from the text		30
(ii) Paragraph writing		20
	Total	50
Part II—(30 minutes)		
Dictation		30
	Total	80
Paper III—Viva-voce		40
	Total	40

Text Books :

G. Mauger—Cours de langue et de civilisation françaises-I.
(Lesson I—35).

Reference Books :

1. M. Paranjape : Essential French.
2. Larousse : French-English and English-French Dictionary.

Second Year Examination (Diploma Course in French) :

Paper I—(3 Hours Duration)	Full marks	70
(a) Translation from French to English.		40
(b) Translation from English to French.		30
	Total	70

(Passages for the Translations are unseen; dictionary is allowed in the hall).

Paper III—(3 Hours)	Full marks	70
(a) Questions from the unseen Passage		20
(b) Essay (One topic to be selected out of five)		50
	Total	70

Paper IV—Viva-voce

100

*Text Book :*G. Mauger : Cours de langue et de Civilisation francaises I.
(Lesson 36-65).

Paper II—(3 Hours)

Full Marks 60

(a) Questions from the text

20

(b) Grammar

40

Total

60

Reference Books :

1. Larouses : Dictionnaire du vocabulaire essentiel.
2. Larousse : Apprendre la grammaire.
3. Edited by Dany : Le francais et laprofession.
4. Mauger & Brueziere : Le francais accelere.

Third Year Examination (Post-Diploma Course in French) :

Paper I—(3 hours)

Full marks 100

TRANSLATION

(1) Translation from French to English

60

(2) Translation from English to French

40

Total

100

(Passages for the Translations are unseen; dictionary is allowed in the hall).

Paper II—(3 Hours)

Full marks 100

Grammar & Composition :

(1) Grammar from the text

50

(2) Questions from the unseen passage

25

(3) Precis writing

25

Total

100

Paper III—(3 Hours)

Full marks 100

Literature :

- (1) Poetry : (2 questions are to be answered out of 4). 40
 (2) Prose : (2 questions are to be answered out of 4). 30
 (3) Drama : (2 questions are to be answered out of 4). 30

Total	100
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(Answers may be written either in English or in French)

Paper IV

Viva-voce

100

Grand Total	400
-------------	-----

- (1) Reading of an unseen passage; questions on the vary passage.
 (2) Conversation on general topics and on French Literature and Culture.

Text-Books

- (1) G. Mauger : Cours de langue et de civilisation francaises-II.
 (2) A Book of French Verse : A Maria Gabrial.
 (3) Le Cid : Pierre Corneille.
 (4) L. Eltranger : Albert Camus.

The following poems are to be read :—

- | | |
|----------------------------|-------------|
| (1) A Cassandre | Ronsard |
| (2) La Cigale et la fourmi | La Fontaine |
| (3) Le lac | Lamartine |
| (4) La mort du Loup | Vigny |
| (5) L' expiation | Victor Hugo |
| (6) Tristesse | Musset |
| (7) Correspondences | Baudelaire |
| (8) Brise Marine | Mallarme |

Reference Books :

- | | |
|--|------------------------------------|
| (1) Interprete F-A/A-F | Larousse |
| (2) Le franscais des hommes d'affaires | Dany, Reberieux and
: De Renty. |
| (3) Grammaire pratique du franscais d'aujourd'hui. | : G. Mauger. |

- (4) A History of French literature. : L. Cazamian.
 (5) Manual des études littéraires françaises : V. (xix Siecle) P. Castex and Surer.
 (6) Albert Camus : Robert de Leppe.

RUSSIAN

First Year Exumination (Certificate Course in Russian) :—

Paper I (2 Hours duration)	Max. Marks	80
(a) Translation from English into Russian		25
(b) Translation from Russian into English or Hindi		30
(c) Dictation (Half an hour) (Dicttionary not allowed in the Exams)		25
		<hr/> 80 <hr/>

Paper II

Time—Two Hours :	Max. Marks	80
(a) Grammar : Varb conjugation declension of Nouns, pronouns and adjectives.		40
(b) Question from unseen passeege		20
(c) Paragraph writing. (Unseen passage for summary and translation must be confied to the vacabulary taught in the class).		20
	Total	<hr/> 80 <hr/>

Paper III

Viva-voce		40
	Grand Total	<hr/> 200 <hr/>

Text Book Prescribed :

1. Russian by Wagner and Orsienks (1 to 31 lessons).

Books recommended :

1. Learning, Russian by Nina Potapova (1st and 2nd Volume).
2. Russian Phonatic By G.S. Anosvuovea.

3. Russian English Dictionary by A.K. Hmanova.
4. English Russian Dictionary By Muller.

Second Year Examination (Diploma Course) in Russian 1984 :—

Part I—Time 3 Hours :	Max. Maks	70
(a) Translation from Russian into English or Hindi.		40
(b) Translation from English into Russian.		30
(Dictionary Allowed).		—
	Total	70
Paper II—Time 3 Hours :	Max. Marks	60
(a) Grammar		60
	Total	60
Paper III Time 3 hours :	Max. Marks	70
(a) Essay writing (one topic to be selected out five) about 250 words.		50
(b) Question from the given texts.		20
	Total	70
Paper IV—Viva-voce		100
	Grand Total	300

Text Book prescribed :

1. Russian by Wagner and Ovgienks (Lessons 25 —47).

Books recommended :

1. Learning Russian by Niva Potapowa (Vol 3 and).
2. Russian Grammer by Pulkina.
3. Russian English Dictionary by Akhmanvva.
4. English Russian Dictionary by Muller.
5. USSR : Questions and answers (in English).

Post Diploma in Russian Examination, 1984 :**Paper I—Translation**

Time 3 Hours

Max. Marks 100

(a) Translation from Russian into English or Hindi

50

(b) Translation from English into Russian.

50

(Dictionary allowed).

Total 100**Paper II—Time 3 hours**

Max. Mark 100

(a) Grammar

70

(b) Precis writing

Total 100**Paper III—Time 3 Hours**

Max. Marks 100

(a) Essay on current topics

60

(b) Question from Russian literature XIXth century to be answer one out of three.

40

Total 100**Paper IV—**

Viva-voce

100 marks

(a) Reading of an unknown text summary and question on it.

(b) Conversation.

(c) Question on XIXth and XXth Century Russian literature.

Total 400**Books :**

Text book 1. Russian by Wagner and Ovsienxs (Lesson 47-60).

Reference Books :

1. Russian By I.M. Pulkina.
2. Exercises in Russian Syntex—by F.S. Belivietskaya—Belevietskaya—Kahalizova and others.

3. Russian in exercises by S. A. Khommiva and A. I. Shivochenskava
4. Verbs of Motin by L.S. Murvavyova.
5. From Russian Prose—Compiler a Turkov Moscow, 1-74
6. The Russian Poets—Compiled by K. Boodanova Progress Pubushers—Moscow
7. Language Practice :
Comprehension, precis—writing composition and Conversation—Moscow Publication.
8. Dictionaries :
(a) Russian-English by Akhmanova.
(b) English-Russian by Muller.
(c) Russian-Russian by Orhigov.

Minutes of the meeting of the Adhoc Committee of Courses in Journalism held on December 21, 1983 at 12 noon in the Vice-Chancellor's Secretariat, University Campus, Jaipur.

Present :

1. Dr. Om Prakash (Convener)
2. Dr. Bhanwar Surana
3. Dr. T. Bhattacharya

Proceedings :

(1) The Committee scrutinised eligibility in the PANEL OF EXAMINERS and recommended the same for 1986 in terms of S(25) (2) (i).

(2) The Committee could not offer any comments on the reports of examiners and the standard of question papers since the relevant reports/papers were not placed before the Committee.

(3) It was, however, pointed out that Paper II (News Gathering) of 1986 Examination contained seven questions (out of ten in all) which were not according to the syllabus approved by the Committee. The Controllor of Examinations was requested to look into the matter.

(4) The Committee recommended that the courses of study for the P.G. Diploma Course in Journalism approved for 1984, be adopted for the year 1986 also.

(5) The Committee strongly recommended that the Courses of Study for the P.G. Diploma Course in Public Relations and Advertising, already passed by this Committee and other University bodies, be introduced with effect from the 1984-85 session and that necessary amendments in the Ordinance might be made well in advance.

(6) The Committee felt that a Department of Journalism be created in the University of Rajasthan, and that Bachelor of Journalism as well as Master of Journalism Courses be started therein. It was suggested that a meeting for the preparation of courses be specially convened with some external experts as special invitees.

Sd/-
(Om Prakash)
Convener

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN SANSKRIT HELD ON 22-9-83
AND 3-10-83 AT 12 NOON IN THE VICE-
CHANCELLOR'S SECRETARIAT,
UNIVERSITY CAMPUS
JAIPUR.

Present :

1. Prof. R.C. Dwivedi (Convener)
2. Dr. Prabhakar Shastri
3. Dr. N.C. Pathak
4. Dr. Abhaideo Sharma
5. Dr. Chandra Kishore Goswami
6. Dr. P D. Sharma
7. Dr. M.C. Pathak

1. Under sub-section 8 of Section 24E of the University Act, the Board appointed Dr. R.C. Dwivedi, Professor and Head of the Department of Sanskrit, University of Rajasthan, Jaipur as Convener of the Board of Studies for a fresh term of *three* years.

2. Under Clause (iv) of Sub-Section (4) of Section 34 of the University Act, the Board elected Dr. Chandra Kishore Goswami Head of the Department of Sanskrit, B. V. G. V. College, Banasthali as member other than the Convener to serve on the Committee for selection of examiners in the subject for the year.

3. The Board scrutinised the statement of qualification and teaching experience etc. of teachers received from the University teaching Departments, University Colleges, affiliated institutions and other University for inclusion in the revised panel of examiners and prepared the complete panel of examiners in terms of Clause 2(a) of Statute 25 of the University Hand Book Pt. II giving full names and correct address of examiners.

4. The Board discussed the report of examiners and question papers set resolved as follows :

- (i) The language of the question for B.A. & B.A. (Hons.) should be in Hindi only.
- (ii) The language of the questions set for M.A. should be Sanskrit and Hindi.
- (iii) Passage/(s) for translation into Sanskrit should be set in Hindi only.

- (iv) Many of the Reports of the Examiners are not to the point. The Board desired that keeping in view the comments made by the Examiners Tutorials in Sanskrit should be introduced and teachers should assign regular Home-work to the students for improvement in Sanskrit language.
- (v) The Following instruction should be printed at the top of each question paper :

At this stage the meeting was adjourned to meet again on 3.10.83. Before proceeding with the next item of the agenda, the Board confirmed the minutes of its meeting held on 22.9.83.

5. The Board recommended courses of study and text-books for the following examinations as per appendices.

- I. T.D.C. (Appendix-1).
- II. B.A. (Hons. Pt. I & II, New Scheme)—(Appendix-2)

The Board was adjourned to meet in December, 1983 to finalise the course relating to M A., M.Phil and Certificate/Diploma courses and to consider remaining items of the Agenda.

The meeting ended with a vote of thanks to the Chair.

Sd/-
(R. C Dwivedi)
Convener

प्रथम वर्ष कला (T.D.C. Ist Year)

10 संस्कृत (Sanskrit)

पाठ्यक्रम :

भाग—अ

- | | | | |
|----|-----|--|--------|
| 1. | (a) | हितोपदेश मित्र लाभ से हिन्दी में अनुवाद | 7 अंक |
| | (b) | हितोपदेश मित्र लाभ में से सामान्य प्रश्न | 3 अंक |
| 2. | (a) | रघुवंश (त्रयोदश सर्ग) हिन्दी में अनुवाद | 20 अंक |
| | (b) | रघुवंश (त्रयोदश सर्ग) पर सामान्य प्रश्न | 5 अंक |
| 3. | (a) | स्वप्नवासवदत्तम् से हिन्दी में अनुवाद | 18 अंक |
| | (b) | स्वप्नवासवदत्तम् पर सामान्य प्रश्न | 5 अंक |
| | (c) | स्वप्नवासवदत्तम् से संस्कृत में श्लोक का अन्वय | 2 अंक |

भाग—ब

- | | | | | | |
|----|-----------------------------|---|--------|----------|--|
| 4. | (a) | समास (दो या तीन शब्दों से बड़ा नहीं) | 3 अंक | } 15 अंक | |
| | (b) | कारक, कृदन्त, तद्धित
(2 अंक प्रति प्रकरणा) | 6 अंक | | |
| | (c) | निर्धारित शब्दों के रूप | 3 अंक | | |
| | (d) | निर्धारित वातुओं के रूप | 3 अंक | | |
| 5. | सूत्रात्मक शैली से व्याकरण— | | | | |
| | लघु सिद्धान्त कौमुदी | | | | |
| | (a) | संज्ञा प्रकरणा (पूर्ण) | 5 अंक | } 15 अंक | |
| | (b) | संवि प्रकरणा | 10 अंक | | |

निम्नलिखित प्रयोगों की सिद्धि—

मुच्युपास्यः, मञ्जरिः, धात्रंशः, लाकृतिः, हरये, विष्णवे,
 नायकः, पावकः, गव्यम्, गव्यूतिः, उपेन्द्रः, गंगोदकम्, कृष्णविः,
 हर इह, हर मिह । कृष्णैकत्वम्, गंगौघः, उपति, प्रठौहः, प्राच्यति,
 प्रेजते, जिवेहि, मनीषा, दैत्यारिः, श्रीशः, हरेज्व हरी एतो, विष्णू
 इमौ, गंगे अमू, अमी ईजाः, अहो ईजाः, रामश्चेते, रामश्चिनोति,
 विष्णः रामप्पष्ठः, पण्यम्, वागीशः, एतन्मुरारिः, तल्लयः,
 उत्थानम्, वाग्वरिः, तच्छिवः, हरिवन्दे, यजांसि, शान्तः संस्कर्ता,
 सन्नच्युतः, प्रत्यङ्ङत्मा, शिवच्छाया । विष्णुस्त्राता, हरिश्चेते,
 शिवोऽर्च्यः, शिवो वन्द्यः, देवा इह, भो देवा, पुना रमते, मनोरयः ।

6. अनुवाद—उपर्युक्त व्याकरण पाठ्यक्रम को ध्यान में रखकर समान स्तर के वैकल्पिक वाक्य अनुवाद के लिए पूछे जायेंगे।

10 अंक

नोट—1 अध्यापकों से यह अपेक्षा की जाती है कि वे सम्बद्ध सूत्रों का अध्यापन कराते समय उपर्युक्त शब्दों के समकक्ष अन्य उदाहरणों से भी विद्यार्थियों को परिचय करायें।

2. उपर्युक्त शब्दों को सिद्धि में प्रयुक्त होने वाले सूत्रों को व्याख्या का सभी तीनों वर्षों में समान अध्यापन भी विद्यार्थियों को अनिवार्यतः कराया जाना है।
3. परीक्षा का माध्यम हिन्दी/अंग्रेजी रहेगा परन्तु प्रश्न-पत्र केवल हिन्दी में ही बनाया जायेगा। परीक्षार्थी को यह छूट है कि वे हिन्दी, संस्कृत अथवा अंग्रेजी में से किसी भी भाषा में उत्तर दे सकेगा। यदि परीक्षक ने किसी प्रश्न विशेष के लिए भाषा का निर्देश दिया है तो उस प्रश्न का उत्तर उसी भाषा में देना अनिवार्य होगा।
4. संस्कृत को केवल देवनागरी लिपि में लिखा जाना अपेक्षित है।

निर्धारित पुस्तकें :

भाग अ

- | | |
|--|--------|
| 1. गद्य—हितोपदेश मित्रलाभ | 10 अंक |
| 2. पद्य—रघुवंश महाकाव्य (त्रयोदश सर्ग) | 25 अंक |
| 3. नाटक—स्वप्नवासवदत्तम् | 25 अंक |

भाग ब

- | | |
|----------------------------------|---------|
| 1. व्याकरण एवं अनुवाद (15+15+10) | 40 अंक |
| | <hr/> |
| | 100 अंक |
| | <hr/> |

(a) 'सन्धियों' से लेकर निम्नलिखित धातुएं—चिन्त्, तल, तक का पाठ्यक्रम यथावत् रहेगा।

(b) लघु सिद्धान्त कौमुदी—संज्ञा व सन्धि प्रकरण मात्र ।

(i) अनुवाद—उपयुक्त व्याकरण, पाठ्यक्रम को ध्यान में रखकर समान स्तर के वैकल्पिक वाक्य अनुवाद के लिए पूछे जायेंगे ।

द्वितीय वर्ष कला (Pass Course Exam.) 1986

प्रथम पत्र—कोई परिवर्तन नहीं ।

द्वितीय पत्र—भारतीय संस्कृति के तत्त्व, पद्य साहित्य, अनुवाद. रचना एवं व्याकरण । (शीर्षक में से “रचना” शब्द हटायें)

इस प्रश्न पत्र में अंक विभाजन इस प्रकार होगा ।

1. भारतीय संस्कृति के तत्त्व	30 अंक
2. पद्य साहित्य	30 अंक
3. अनुवाद	15 अंक
4. व्याकरण (नामिक प्रकरण)	25 अंक
	— — —
	100 अंक

भारतीय संस्कृति के तत्त्व—वर्तमान में निर्धारित पाठ्यक्रम में जोड़ें ।

(ज) भारतीय दर्शन की प्रमुख विचारधारायें—आस्तिक एवं नास्तिक दर्शनों का सामान्य परिचय ।

सहायक पुस्तकों में जोड़ें ।

1. भारतीय दर्शन परिचय—दत्त एवं चटर्जी
2. भारतीय दर्शन की रूपरेखा—श्री एम. हिरयन्ना

व्याकरण—वर्तमान में निर्धारित पाठ्यक्रम लघु सिद्धान्त कौमुदी—सन्धि प्रकरण के अंश से लेकर विसर्ग सन्धि के सूत्र संख्या 43 का भाग हटायें और उसके स्थान पर “लघु सिद्धान्त कौमुदी—नामिक (अजन्त तथा हलन्त) प्रकरणों में से निम्नलिखित शब्दों की सिद्धि— जोड़ें

- (1) राम, (2) सर्व, (3) हरि, (4) कोष्ट, (5) रमा, (6) मति,
- (7) ज्ञान, (8) दधि, (9) लिह, (10) डुह, (11) चतुर,
- (12) इदम्, (13) युष्मद्-अस्मद्, (14) इदम्, (स्त्रीलिङ्ग),
- (15) अहन ।

सहायक पुस्तकें—

1. रघुवंश (त्रयोदश सर्ग) कालिदास—प्रकाशक-हंसा प्रकाशन, 57 मिश्रराजा जी का रास्ता, जयपुर ।
2. रचनानुवाद कौमुदी—डॉ० कपिलदेव द्विवेदी, विश्वविद्यालय, प्रकाशन, गोरखपुर, मूल्य 6.00 ।
3. संस्कृत रचनानुवाद प्रभा—डॉ० श्रीनिवास शास्त्री ।
4. लघु सिद्धान्त कौमुदी (छात्रोपयोगी संस्करण) प्रकाशक—अजमेरा बुक कम्पनी, त्रिपोलिया बाजार, जयपुर
5. स्वप्नवासवदत्तम् —प्रकाशक—अजमेरा बुक कम्पनी, जयपुर ।
6. संस्कृत व्याकरण तरंगिणी—आर्य बुक डिपो, करोल बाग, नई दिल्ली ।
7. संस्कृत अनुवाद कला—आर्य बुक डिपो, करोल बाग, नई दिल्ली ।
8. अनुवाद चन्द्रिका —डॉ० ब्रह्मानन्द त्रिपाठी, चौखम्बा प्रकाशन, वाराणसी ।
9. संस्कृत निबन्ध कला—आर्य बुक डिपो, करोल बाग, दिल्ली ।
10. व्याकरण रचनानुवाद कौमुदी—डॉ० वावूराम त्रिपाठी, महा-लक्ष्मी प्रकाशन, आगरा ।
11. स्नातक संस्कृत व्याकरण—डॉ० नेमीचन्द शास्त्री, ज्ञानदा प्रकाशन, पटना ।
12. व्याकरण साहित्य, प्रकाशक—डॉ० नारायण शास्त्री कांकर, अजमेरा बुक कम्पनी, जयपुर ।

संदर्भ ग्रन्थ—

1. अष्टाध्यायी भाष्य—श्री ब्रह्मदत्त जिज्ञासु ।
2. लघु सिद्धान्त कौमुदी, व्याख्याकार—श्री भीमसेन शास्त्री ।
3. लघु सिद्धान्त कौमुदी—व्याख्याकार—श्री महेशसिंह कुशवाहा ।
4. लघु सिद्धान्त कौमुदी—व्याख्याकार—श्रीधरानन्द ।
5. अष्टाध्यायी—(मूल मात्र) आर्य साहित्य मंडल, अजमेर ।

नोट :—अजन्त (पुल्लिङ्ग, स्त्रीलिङ्ग एवं नपुंसक लिङ्ग) तथा हलन्त (पुल्लिङ्ग, स्त्रीलिङ्ग एवं नपुंसक लिङ्ग) से चुने गये उपर्युक्त शब्दों की सिद्धि में प्रयुक्त होने वाले सूत्रों के अर्थ को भी सिद्धि के साथ महत्व दिया जाना चाहिये ।

तृतीय वर्ष कला (Pass Course Examination) 1986

प्रथम पत्र :

पाठ्यक्रम में कोई परिवर्तन नहीं । संस्कृत साहित्य के इतिहास की सहायक पुस्तकों में जोड़े ।

संस्कृत साहित्य का सरल इतिहास—डा. देवीचन्द्र शर्मा, डा. रणजीत शर्मा, प्रकाशन—ज्ञान प्रकाशन, मेरठ ।

द्वितीय पत्र :

इस पत्र की अंक योजना में निम्नलिखित परिवर्तन करें—

द्वितीय पत्र :

द्रुत पाठ, अनुवाद, रचना, निबन्ध संस्कृत भाषा व समीक्षा तथा व्याकरण ।

अंक विभाजन एवं पाठ्यक्रम :

1. द्रुत पाठ	20 अंक
2. अनुवाद	20 अंक
3. रचना (निबन्ध)	20 अंक
4. भाषा व समीक्षा	10 अंक
5. व्याकरण	30 अंक
	<hr/>
	100 अंक

अंक विभाजन—

1. द्रुत पाठ	
(1) श्रीमद् भगवद्गीता से भावार्थ	10 अंक
(2) विद्वज्जनचरितामृतम् से भावार्थ व प्रश्न	10 अंक
2. (1) अनुवाद—अपठित अंश का संस्कृत से हिन्दी में अनुवाद	5 अंक
(2) अपठित अंश—हिन्दी से संस्कृत में अनुवाद	15 अंक
(3) रचना (निबन्ध)	20 अंक

4. भाषा व समीक्षा

- (1) भारतीय आर्य भाषा के उद्गम और विकास की सामान्य रूपरेखा । (प्राकृत तक)
- (2) अलंकार शास्त्र के प्रमुख सम्प्रदायों का सामान्य परिचय

10 अंक

5. व्याकरण—वर्तमान में निर्धारित व्याकरण के अंश "कृत्य प्रक्रिया तथा पूर्वकृदन्त प्रकरण" को हटाकर इसके स्थान पर निम्नलिखित अंश जोड़े—

निम्नलिखित धातुओं के सभी लकारों में रूप सिद्धि—

- (1) भू (2) एष् (3) क्रमु (4) अव् (5) हु
 (6) दिवु (7) पुम् (8) तुद् (9) रुव् (10) डुकृज्
 (11) तनु (12) चूर् ।

30 अंक

 100 अंक

APPENDIX—II

बी. ए. शानस पार्ट I (द्विर्षीय पाठ्यक्रम) 1986

प्रथम पत्र— कोई परिवर्तन नहीं ।

द्वितीय पत्र— कोई परिवर्तन नहीं ।

तृतीय पत्र— सहायक ग्रन्थों में जोड़ें ।

(1) तर्क संग्रह—सम्पादक बोडास

(2) तर्कसंग्रह—सम्पादक डा० दयानन्द भार्गव

(3)

(4) भारतीय दर्शन की रूपरेखा—डा० हिरयन्ना

चतुर्थ प्रश्न-पत्र—(1) धर्मशास्त्र—वर्तमान में निर्धारित अंश को हटाकर जोड़ें—याज्ञवल्क्य स्मृति आचाराव्याय (सम्पूर्ण)
30 अंक

(2) व्याकरण—वर्तमान में निर्धारित संज्ञा प्रकरण तथा छन्द प्रकरण के चुने हुए विविष्ट सूत्र आदि समस्त पाठ्यांश जो हटाकर जोड़ें—

लघु सिद्धान्त कौमुदी षड् लिङ् प्रकरण

(अजन्त पुल्लिङ्ग, स्त्रीलिङ्ग, नपुंसकलिङ्ग (सम्पूर्ण) एवं हलन्त पुल्लिङ्ग, स्त्रीलिङ्ग, व नपुंसकलिङ्ग प्रकरण)

अजन्त—20 अंक
हलन्त—20 अंक

40 अंक

शेष यथावत् ।

बी. ए. शानस पार्ट II (द्विर्षीय पाठ्यक्रम) 1986

पंचम पत्र—कोई परिवर्तन नहीं

षष्ठ पत्र—कोई परिवर्तन नहीं

सप्तम पत्र—1. भारतीय संस्कृति के तत्व—वर्तमान में निर्धारित पाठ्यक्रम में जोड़ें—

(40 अंक)

(a)—भारतीय दर्शन की प्रमुख विचारधाराएँ

2. संस्कृत साहित्य का इतिहास—वर्तमान में निर्धारित पाठ्यक्रम में जोड़ें—

(30 अंक)

वैज्ञानिक साहित्य व शास्त्रीय साहित्य का इतिहास

(ख) (1) भारतीय आर्य भाषा के उद्गम और विकास की सामान्य रूपरेखा (प्राकृत भाषा तक)

(2) अलंकार शास्त्र के प्रमुख सम्प्रदायों का सामान्य परिचय (10 अंक)

अष्टम पत्र—व्याकरण (समास, तद्धित, स्त्रीप्रत्यय एवं कारक के निर्धारित वर्तमान अंश को हटाये और उसके स्थान पर निम्नलिखित अंश जोड़ें—

लघुसिद्धान्त कौमुदी—तिङन्त प्रकरण (सम्पूर्ण) 70 अंक
शेष पाठ्यक्रम यथावत ।

MINUTES OF THE MEETING OF THE BOARD OF
STUDIES IN PUBLIC ADMINISTRATION HELD ON
23RD SEPTEMBER 1983 AT 12.00 NOON IN
THE VICE-CHANCELLOR'S SECTARIAT.

Present :

1. Prof. Ramesh K. Arora
2. Dr. V.M. Sinha
3. Dr. Hoshier Singh
4. Shri K L. Chawala
5. Mrs. Sharda Goswami
6. Dr. C.M. Jain
7. Dr. Y.S. Mehta

1. Under Sub-Section (8) of section 24E of the University Act, Prof. Ramesh K. Arora was appointed as the Convener, Board of Studies in Public Administration for a period of three years.
2. Under clause (IV) of Sub-Section (4) of Section 34 of the University Act, Dr. V.M. Sinha was elected to serve on the committee for Selection of Examiners in the subject of Public Administration for the year 1983-84.
3. It was noted that the panel of examiners for the subject had become out-dated and need to be revised. The revised panel should be presented in the next meeting of the Board.
4. It was observed that examiners do not provide elaborate comments on the performance of candidates. Let reports should be sought and relevant extracts should be sent to the Head of Institutions where the concerned subjects are taught.
5. No alterations were suggested in the courses for T.D.C. (Pass course), Honours Examinations and M.Phil. Examinations. For Post-Graduate examinations, the following fresh papers be added among the Optional Papers (Group B). Paper XV : State Administration (with particular reference to Rajasthan) (Syllabus to be decided later); Paper XVI : Educational Administration (with particular reference to India) Syllabus to be decided; Papers XVII Dissertation (in place of Paper XVIII).
6. It was observed that the translation of syllabi should be undertaken by the University through competent people in a Uniform manner.
7. The letter No. F. 3-29/89(CD) dated 18 February 1982 from the Secretary, U.G.C. was noted.

8. D.O. letter No. F 4-19/82(ER) dated 19 January, 1983 from the Chairman, University Grants Commission, New Delhi regarding examination reforms and letter No. F3 (8)/82/GP dated 28 July, 1982 from the Secretary, U.G.C. were noted.

The meeting ended with a vote of thanks to the Chair.

(Ramesh K. Arora)
Convener
